DOCUMENT RESUME

ED 151 561 08 CE 015 150

AUTHOR Weis, Susan F.
TITLE Food Service Curriculum Validation Project. Final Report.
INSTITUTION Pennsylvania State Univ., University Park.
SPONS AGENCY Pennsylvania Research Coordinating Unit for Vocational Education, Harrisburg.
BUREAU NO 19-6801
PUB DATE Mar 78
NOTE 157p.

EDRS PRICE MF-$0.83 HC-$8.69 Plus Postage.
DESCRIPTORS *Curriculum Development; *Curriculum Evaluation; *Curriculum Guides; *Field Studies; *Food Service; Food Service Industry; Food Service Occupations; Secondary Education; Teacher Attitudes; Teacher Workshops; *Vocational Education
IDENTIFIERS Pennsylvania

ABSTRACT

An intensive evaluative study was conducted in Pennsylvania to test, through field implementation, curriculum guidelines for food service education which were prepared from a baseline, two-year study of the food service industry. Draft guidelines were presented to selected food service teachers through a series of three one-day conferences. Reactions to the draft curriculum were collected from all food service teachers receiving the document. An intensive study of the curriculum implementation was undertaken in six schools with three schools serving as control sites. Based on the evaluation study, the draft guidelines were revised for dissemination. The results of the study suggested that the draft curriculum made a positive difference in educating food service students. In addition, feedback from food service teachers who participated in the three one-day workshops was generally positive, and their suggestions for changes were considered in preparing the final draft of the curriculum. As a result, the 1,004-page curriculum was refined to a 658-page curriculum guide entitled "Curriculum Guide for Food Service Instructional Programs in Pennsylvania." (Author/BM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED151561

APR 10 1978

FINAL REPORT

FOOD SERVICE CURRICULUM VALIDATION PROJECT
(Project Number 19-6801)

Susan F. Weis, Project Director
Susan L. Lewis, Project Associate
Thomas F. Powers, Project Associate

The Pennsylvania State University
University Park, Pennsylvania

March 1978

Pennsylvania Department of Education
Bureau of Vocational Education
Research Coordinating Unit

OE 015 150

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ABSTRACT

19-6801 Food Service Curriculum Validation

Susan F. Weis
The Pennsylvania State University
University Park, PA 16802
(814)865-5441

$29,877 Federal
$12,455 Non-Federal
7/1/76 to 12/31/77

Curriculum guidelines for food service education, which were prepared from a baseline, two-year study of the food service industry, were tested through field implementation. Draft guidelines were introduced to selected food service teachers and their reactions to them were assessed periodically. An intensive study of the curriculum implementation was undertaken in six schools with three schools serving as control sites. Based on the evaluation study, the draft guidelines were revised for dissemination.

Objectives

1. Conduct an intensive evaluative study of the curriculum guidelines developed during 1975-76 at six sites.
2. Present the draft curriculum through a series of three one-day conferences to as many food service teachers as possible excluding those whose programs serve as control sites.
3. Collect reactions to the draft curriculum from all food service teachers receiving this document.
4. Revise the draft curriculum into a final form employing reactive feedback and results of the evaluative research.
5. Develop strategies for adapting the food service curriculum guidelines to comprehensive high schools.

Outcomes

The following summarize the major outcomes of this project:

1. An intensive study of the draft curriculum was made yielding results which suggest that it has made a positive difference in educating food service students.
2. The draft curriculum was presented to 19 food service teachers during fall 1976 in a series of three one-day workshops. Feedback from these teachers during the school year was generally positive and their suggestions for changes were considered in preparing the final draft of the curriculum.
3. The 1004-page draft curriculum was refined to a 658-page curriculum guide, entitled, Curriculum Guide for Food Service Instructional Programs in Pennsylvania.

Audience

The resulting reports and curriculum guide are useful to Food Service educators and curriculum planners in occupational home economics fields.

Publications and Available Materials

- Final Report
- Curriculum Guide for Food Service Instructional Programs in Pennsylvania

ACKNOWLEDGEMENTS

Appreciation is expressed to the following persons in the Department of Education, Harrisburg, Pennsylvania:

Ms. Carolyn Kratz, Senior Program Specialist, Home Economics Education, Bureau of Vocational Education and
Dr. Carroll Curtis, Director, Research Coordinating Unit, Bureau of Vocational Education, for their assistance, helpful insights, and encouragement throughout the project.

Special appreciation is due to the food service instructors in Pennsylvania who graciously gave their time, energy, talent, and intellect to this effort. Their generous input provided the major substance for the development, evaluation, and refinement of the 658-page Curriculum Guide for Food Service Instructional Programs in Pennsylvania (1977). In particular, the following instructors are to be cited for their assistance:

Virginia Bervine	William Krug
Everett Best	Theodore Mangos
William Flickner	Lee Edwin Moore
Helen Ferguson	Steve Rutter
Anita Kitch	Mautez Wilson
Ruth Krug	

For their assistance in data collection and analysis, special appreciation is due to Ms. Peggy Kimsey, Ms. Penny Kuchta, and Mr. Linell Burrell. The tasks of typing project materials and handling clerical details were cheerfully and skillfully accomplished by Ms. Frances Fox and Ms. Nancy Houtz to whom appreciation is expressed. Our gratitude is also expressed to Ms. Sue Dinger who proofread project materials and assisted in data preparation.

Dr. Susan F. Weis
Ms. Susan L. Lewis
Dr. Thomas F. Powers
March 1978

TABLE OF CONTENTS

	Page
ABSTRACT	2
ACKNOWLEDGEMENTS	3
LIST OF TABLES	5
LIST OF FIGURES	5
INTRODUCTION	6
Background of the Problem	6
Statement of the Problem	7
Objectives	7
PROCEDURES	7
Overview	7
Field Testing and Evaluating the Draft Curriculum Guide	8
Sample and Population	8
Instrumentation	8
Food Service Achievement Test	11
Vocational Commitment Index	11
Competency Attainment Checkiist	11
Multiple Matrix Sampling Techniques	15
Data Collection	16
Introduction of Draft Curriculum Guide to Food Service Teachers	19
Securing Teacher Reaction to Use of the Draft Curriculum Guide	19
Curriculum Reaction Form	19
Introduction of the Draft Guide to the Advisory Committee	23
RESULTS AND FINDINGS	23
Evaluation of the Draft Curriculum Guide	23
Limitations of the Curriculum Evaluation Analysis	30
Examining Teacher Reactions to the Draft Curriculum	30
Revision of the Curriculum Guide	31
Dissemination of the Revised Curriculum Guide	31
SUMMARY	32
REFERENCES	33
APPENDICES	34
A. Table 10	34
B. Instruments Used in Data Collection	68
C. Letter to Teachers, Letter of Information, and Parental Consent Form	115
D. Curriculum Reaction Form	119
E. Minutes of Advisory Committee Meeting	121

LIST OF TABLES

Table		Page
1	Numbers of Students Exposed to Curriculum Guide	10
2	Means, Standard Deviations, and Ranges of Scores on the FSAT of Two Groups of Subjects Responding to the Pilot Instrument	12
3	Descriptive Data on the FSAT	13
4	Number and Proportions of FSAT Items Representative of Proportions of Content Areas in Curriculum Guide	14
5	Subtest Combinations Forming Test Packets for Data Collection	17
6	Numbers of Subjects Participating in Pretesting and Posttesting By Programs	18
7	Pretest and Posttest Means and Standard Deviations of Programs on Subtests of CAC, FSAT, and VCI	25
8	Generalized Regression Analyses	27
9	Means, Standard Deviations, and Correlation Coefficients of All Variables	28
10	Item Content, Item Difficulty Value, Point-Biserial Correlation, and t-Value of 158-Item FSAT Administered to Two Groups of Subjects	35

LIST OF FIGURES

Figure		Page
1	Representation of Experimental and Control Programs By School Setting, Type of School, and Geographic Region	9
2	Dates, Locations, and Teachers Participating in Three One-Day Workshops to Introduce Draft Curriculum	20
3	Agenda: Extensive Test Food Service Curriculum	22
4	Composition of the Advisory Committee	24

INTRODUCTION

Background of the Problem

In 1970, the first efforts were underway to provide an annual summer workshop for the inservice education of vocational food service teachers in Pennsylvania. The workshops were held from 1970 to 1975, each year focusing upon a different need; such as curriculum development, individualizing instruction, teaching techniques, and evaluation (Weis, Bellanti, and Korkus, 1977; Weis, Bellanti and Korkus, 1974; Weis and Wayda, 1974; Weis and Wayda, 1973; and Weis, 1973).

Simultaneously during this period, the faculty of the Food Service and Housing Administration Department at The Pennsylvania State University, adopted a basic research aim of identifying the major forces shaping the food service industry to understand the probable direction of change in this and related industries. In 1973 a baseline study of the future of the food service industry was undertaken. The project resulted in a collection of research oriented essays detailing the past and present status of the nation's commercial and institutional food service practices (Powers, 1974). A second volume emerged one year later presenting the series of scenarios which examined the possible directions of food service industries in the next ten to fifteen years to glean necessary information for planning vocational technical curricula at the secondary level (Powers, 1975).

Subsequent development of a curriculum for secondary food service education programs in the Commonwealth began by looking at the realities of the food service world in terms of economic trends influencing the industry, historical patterns, demographic forces, and lifestyle patterns such as the processes of urbanization, suburbanization, income patterns, leisure time and work activities, and migration patterns, and the industry's response to these forces in terms of capital structure, firm size, market areas covered, employment patterns, and location. Other factors that were considered included current and projected trends that have nutritional implications such as the consumer movement, new cultural patterns in eating: frequent, smaller, individual mini-meals and fewer family unit meals, and the increasing use of fabricated substitutes for proteins and other foods. Also examined were food processing equipment with a particular concern for energy use and transfer; food processing methods, such as canning, food dehydration, frozen foods, freeze drying, and irradiation that will affect food and future food preparation systems.

The future direction of the industry was studied in terms of income projections, work force, and the consumption and demand for food service. These factors were translated into a set of optomistic scenarios that explored the assumption of higher personal and corporate incomes in a relatively bouyant, and active government involvement focusing on two general areas of the public sector food service: the school lunch and related programs, and congregate feeding for the elderly. A set of pessimistic scenarios also were developed to explore the reciprocity of less rapidly rising consumer incomes and a higher level of relative price change for food service than for prices in the economy in general.

To accompany this baseline research as foundations for development of the curriculum, an intensive search of the literature was made. Additionally, input was sought from industry representatives, from vocational food service instructors, and from observational visits to programs in representative schools throughout the state. Information from these sources were combined to form the substance of process as well as content for food service education, yielding a 1004-page draft of a food service curriculum guide (Powers, Lewis, and Weis, 1976).

Statement of the Problem

The overall purpose of this project was to field test, evaluate, and refine the draft curriculum guide for vocational food service education in Pennsylvania. The field testing and evaluation of the curriculum focused upon the issue of its validity as a guide for secondary level vocational food service programs. To this end the following objectives were set forth for conducting this project.

Objectives

1. Conduct an intensive evaluative study of the curriculum guide developed during 1975-76 at six sites.

2. Present the curriculum to selected food service teachers in a series of three one-day conferences.

3. Collect and examine the reactions of all food service teachers exposed to the curriculum guide.

4. Revise the curriculum guide into a final form using information from the evaluative study and from teacher reactions.

5. Develop strategies to adapt the food service curriculum guide to comprehensive high schools.

PROCEDURES

Overview

This project involved six major activities:

1. developing and implementing a traditional experimental design for field-testing and evaluating the draft curriculum guide,
2. planning and conducting three, one-day conferences to introduce the draft curriculum guide to food service teachers around the state,
3. developing and implementing a system for securing teacher reaction to use of the curriculum,
4. introducing the draft curriculum to the advisory committee,
5. examining teacher reaction to draft curriculum guide, and

6. revising the draft curriculum guide for reproduction and subsequent distribution to all vocational food service teachers in Pennsylvania.

Field Testing and Evaluating the Draft Curriculum Guide

The evaluative study of the draft curriculum guide employed a traditional experimental design to determine the effects of curriculum implementation upon (1) student achievement, (2) student attitude, and (3) student performance.

Sample and Population. Six schools were selected for the field testing of the curriculum guide. These schools were selected to represent the variety of food service programs in inner-city skills center, area vocational technical schools, and comprehensive high schools. Additionally, these six schools were believed to represent urban and rural schools from locations in the western, central, and eastern regions of Pennsylvania. The food service programs in these six schools were designated as experimental programs for this study.

Teachers from the experimental programs met with the project staff in August 1976 for a two-day workshop to receive copies of the draft curriculum guide and a thorough briefing on its use. The field testing of the curriculum then began in these programs with the start of their classes for the 1976-77 school year.

The food service programs of three schools were designated as control programs. No implementation of the curriculum guide occurred in these three programs, although pretest and posttest data were collected from students to enable comparisons with data from the experimental programs.

The breakdown of experimental and control sites for this study by (1) type of school, (2) school setting, and (3) geographic region of the state is presented in Figure 1.

A detailed breakdown of the numbers of students exposed to teaching with the curriculum guide in the experimental programs is presented in Table 1. Two hundred and forty-six students were taught by six teachers using the draft guide. Of these 246 students, 87 were males, 4 of whom were classified as disadvantaged and 11 of whom were handicapped students, although one school did not distinguish between disadvantaged or non-disadvantaged students. The 159 female students exposed to teaching with the guide included 5 disadvantaged students and 15 handicapped students. Three female students are listed twice; once as handicapped and again, as disadvantaged.

Instrumentation. Criteria for evaluation of the curriculum guide included student achievement, student attitude, and student performance. The measurement of these criterion elements was imputed from the interpretation of scores on three instruments: a Food Service Achievement Test, the Vocational Commitment Index, and a Competency Attainment Checklist.

FIGURE 1

REPRESENTATION OF EXPERIMENTAL AND CONTROL PROGRAMS BY SCHOOL SETTING, TYPE OF SCHOOL, AND GEOGRAPHIC REGION

Program	School Setting		Type of School			Region		
	Rural	Urban	AVTS	Comp.	Skill C.	East	Central	West
E1 Bradford County Area Vocational Technical School		E	E					E
E2 Schenley High School		E		E				E
E3 Lancaster County Area Vocational Technical School, Mt. Joy	E		E			E		
E4 O.V. Catto Skill Center		E			E	E		
E5 Juniata-Mifflin County Area Vocational Technical School	E		E				E	
E6 Clearfield County Area Vocational Tehcnical School	E		E				E	
C1 Highspire High School		C		C			C	
C2 Venango County Area Vocational Technical School	C		C					C
C3 Chester Vocational Technical School		C	C			C		

TABLE 1

NUMBERS OF STUDENTS EXPOSED TO CURRICULUM GUIDE

Program	Total No. Students	Males	Males - Disadvantaged	Males - Handicapped	Females	Females - Disadvantaged	Females - Handicapped
E1	55	10	0	2	45	0	2
E2	36	16	4	7	20	3[a]	8[a]
E3	40	6	0	1	34	0	0
E4	48	48	-[b]	0	0	0	0
E5	48	3	0	1	45	2	5
E6	19	4	0	0	15	0	0
TOTALS	246	87	4	11	159	5	15

[a]Three of eight students were both handicapped and disadvantaged.

[b]Students in this program not distinguished as regular or disadvantaged.

Food Service Achievement Test. From a table of specifications representing the food service curriculum guide, a draft instrument of 158 multiple choice items was constructed. The draft Food Service Achievement Test (FSAT) was administered to 30 undergraduate students majoring in food service or related fields at The Pennsylvania State University, College of Human Development, and to 27 undergraduate students majoring in home economics education in the College of Education at the same university in the fall of 1976. Results of an item analysis computed on responses to the draft FSAT instrument by these 57 subjects yielded a reliability of .86 using Kider-Richardson formula 20 (1937). This reliability estimate indicates adequate internal consistency for a reasonable degree of confidence in the device. Test means, standard deviations, and ranges are presented in Table 2 for the two groups of subjects and for the combined sample pilot testing the instrument. Table 3 presents descriptive data on the draft FSAT from its pilot testing with the 57 subjects. Table 10, Appendix A, presents detailed information on item performance including item content, difficulty, point biserial correlation, and t-value indicative of item discrimination.

Content validity of the instrument is roughly approximated from the proportion of FSAT items representing proportions of curriculum content as illustrated in Table 4. Additional information regarding instrument validity is available from Table 10 in Appendix A.

Vocational Commitment Index. The development of work related attitudes crystallizing toward the vocational commitment of students was assessed using the 74-item Vocational Commitment Index (VCI) (Weis and Hubbard, 1973). This device has been administered to 123 subjects at four levels of career development in the hospitality industry including 38 secondary students preparing for entry level jobs, 14 college students preparing for managerial positions, 33 graduates of a baccalaureate degree program in Food Service and Housing Administration who were currently employed in middle level managerial positions, and 38 teachers of vocational food service programs. When mean scores on the VCI of the four groups were analyzed using a one-way analysis of variance, a signficant F ratio of 12.11 emerged ($p < .01$). This finding indicated that the VCI is capable of distinguishing between levels of vocational commitment as represented in the sample. Reliability of the instrument was estimated from the internal consistency of responses from the 123 subjects to be .96, which is high and warrants confidence in the instrument.

Competency Attainment Checklist. The fundamental food service competencies underlying the draft curriculum guide were literally translated into 250 items for the Competency Attainment Checklist (CAC). The checklist provided a three-point scale for rating the extent to which each competency is achieved as demonstrated by student performance. The three response categories for the scale werecannot do, can do, and can do easily; reflective of unsatisfactory performance, adequate performance, and outstanding performance, respectively. It was intended that the checklist would be completed twice for each student at both the pretest and the

TABLE 2

MEANS, STANDARD DEVIATIONS, AND RANGES OF SCORES ON THE FSAT OF TWO GROUPS OF SUBJECTS RESPONDING TO THE PILOT INSTRUMENT

	$\bar{x}$	S.D.	Range
Group I (n = 30) Undergraduates in food service majors	112.57	7.18	34
Group II (n = 27) Undergraduates in home economics education	95.96	13.14	49
Combined Sample (n = 57)	104.70	13.33	57

TABLE 3

DESCRIPTIVE DATA ON THE FSAT

Number of Subjects	57
Number of Items	158
Number of Choices/Item	4
Kuder-Richardson 20 Reliability	.86
Standard Error of Measurement	4.94
Standard Error of Correlation	.13
Mean Difficulty of Items	.66
Estimated Interitem Correlation	.09
Average Item-Total Score Correlation	.30

TABLE 4

NUMBER AND PROPORTIONS OF FSAT ITEMS REPRESENTATIVE OF PROPORTIONS OF CONTENT AREAS IN CURRICULUM GUIDE

Content Area	Proportion of Content in Guide[a]	Number and Proportions of FSAT Items	
Occupational Orientation	.02	11	.07
Safety	.02	5	.03
Sanitation	.07	21	.13
Applied Nutrition	.13	29	.18
Small Equipment	.14	17	.11
Major Equipment	.19	34	.22
Receiving/Storing/Issuing	.03	7	.04
Quantity Food Production	.22	26	.17
Customer Service	.11	4	.03
Food Service Mathematics	.07	4	.03
	1.00	158	1.01[b]

[a]Based on number of pages in draft curriculum excluding instructional materials.

[b]Overage due to rounding.

posttest levels for this project: once by students on a self-report basis and once by teachers observing each student to provide matched data on student performance. However, this procedure proved to be an extremely burdensome one for teachers instructing up to 55 students per day. Therefore, for this project, student performance is imputed from students' self-reports in response to the CAC. This device was not pretested for reliability or validity. Primarily, because instrument content was developed from the draft curriculum guide. Thus, content validity of the instrument was assumed.

Multiple Matrix Sampling Technique. The three instruments combined to equal 482 items which was considered to constitute an overwhelming test situation for any high school student to attempt on a voluntary basis. To reduce the testing load without destruction of the instruments' integrity, a multiple matrix sampling technique was employed for this study (Husek and Sirotnik, 1968; Lord, 1965; Shoemaker, 1973; and Cahen, 1970). Shoemaker's Partially Balanced Incomplete Block Design (1973)[1] was used in which items were sampled without replacement within each subtest and each of the K items appears with equal frequency among subtests.

To accomplish the item sampling, the Vocational Commitment Index was divided into three subtests: one of 24 items and two of 25 items in length by taking every third item beginning with item 1 for subtest A, item 2 for subtest B, and item 3 for subtest C., etc. The three subtests comprising the VCI are presented in Appendix B, identifiable by the letters A, B, or C in the upper right corner.

The Competency Attainment Checklist was divided into ten separate subtests comprising 25 items each, by taking every tenth item, beginning with item 1 for subtest CAC-1, item 2 for CAC-2, etc. Appendix B also presents the ten CAC subtests identified by the notation, CAC 1, 2, 3, etc., to 10, in the upper right corner.

The Food Service Achievement Test was divided into ten separate subtests of 15 items each by, again, taking every tenth item, as described previously for the CAC. Eight of the weakest items were eliminated from the FSAT to permit subtests of equivalent length. The eight items eliminated were selected on the basis of their negative discrimination values. These items were numbers 9, 40, 78, 84, 108, 119, 134, and 154. The ten subtests comprising the FSAT are presented in Appendix B, identified by the numbers 1 through 10 in the upper right corner.

Subtests from each of the three instruments were systematically combined to form a single test packet for data collection in such a

---

[1]Shoemaker, David M. A note on allocating items to subtests in multiple matrix sampling and approimxating standard errors of estimate with the jacknife. Paper presented at the National Council for Measurement in Education, New Orleans, Louisianna, 1973.

way that 30 combinations of subtests were used. Table 5 illustrates combinations of subtests used in data collection. The packets were randomly distributed to students participating in the study as subjects. It is acknowledged that this matrix sampling technique would have been strengthened for the purpose of estimating growth or change for groups by administering the same subsets of items to the same subjects at pretest and posttest levels (Cahen, 1970). However, this was not possible due to the fluctuation in subjects participating in the data collection activities on these two occasions.

Data Collection. Project personnel travelled to each experimental and control school twice: once to administer the test packets for pretest data as use of the draft curriculum guide began in the fall of 1976, and in the spring of 1977 to collect posttest data. Pretest data were collected from October to December 1976[1], and posttest data were gathered in March and April 1977. Students participating in the project were solicited to volunteer as subjects with a letter explaining the project and the role of subjects in the project, and a form for obtaining parental consent for subjects under 18 years of age. These materials are presented in Appendix C. The letters were sent to teachers in the nine programs to distribute to students prior to the visits by project staff for data collection at each site. All data collection activities were prearranged with teachers and school administrators.

All instruments for data collection were administered by project personnel with one exception. In school C3, administration of the tests was delayed because signed parental consent forms were not secured by the prearranged date. A decision was made by project personnel to enlist the teacher's assistance in pretest data collection efforts at this school to prevent a costly rescheduling of travel plans. This decision proved to be unfortunate as the pretest data were subsequently lost in a fire at the school and were not replicable.

In some cases, oral administration of the instruments was necessary when poor reading skills precluded student response to the paper and pencil tests. In all cases of oral administration of tests, project personnel administered the tests in a professional manner.

Table 6 summarizes the numbers of students participating as subjects in the data collection activities by programs at the pretest and posttest levels. It is noted that some attrition of subjects is evident between pretesting and posttesting despite the loss of pretest data from school C3. Such attrition is attributed to students withdrawing from school, student absence on the day of data collection, and the placement of students in cooperative vocational education experiences in the latter

---

[1]Pretest data collection efforts were delayed by a lengthy teachers' strike in one school and by a program moving into another building at another school.

TABLE 5

SUBTEST COMBINATIONS FORMING TEST PACKETS FOR DATA COLLECTION

Test Packet	VCI Subtests	CAC Subtests	FSAT Subtests
1	A	CAC-1	1
2	B	CAC-2	2
3	C	CAC-3	3
4	A	CAC-4	4
5	B	CAC-5	5
6	C	CAC-6	6
7	A	CAC-7	7
8	B	CAC-8	8
9	C	CAC-9	9
10	A	CAC-10	10
11	B	CAC-1	1
12	C	CAC-2	2
13	A	CAC-3	3
14	B	CAC-4	4
15	C	CAC-5	5
16	A	CAC-6	6
17	B	CAC-7	7
18	C	CAC-8	8
19	A	CAC-9	9
20	B	CAC-10	10
21	C	CAC-1	1
22	A	CAC-2	2
23	B	CAC-3	3
24	C	CAC-4	4
25	A	CAC-5	5
26	B	CAC-6	6
27	C	CAC-7	7
28	A	CAC-8	8
29	B	CAC-9	9
30	C	CAC-10	10

TABLE 6

NUMBERS OF SUBJECTS PARTICIPATING IN
PRETESTING AND POSTTESTING BY PROGRAMS

Program	Pretesting	Posttesting
E1	16	13
E2	24	22
E3	17	15
E4	4	3
E5	36	28
E6	11	6
C1	11	9
C2	39	37
C3	0*	9
TOTALS	158	142

*Pretest data were lost.

part of their program.

Introduction of Draft Curriculum Guide To Food Service Teachers

A series of three one-day conferences were planned to occur in the latter part of the fall in 1976 to introduce the draft curriculum guide to selected food service teachers in Pennsylvania. Teachers from the three control programs were excluded from participating in these conferences to prevent contamination of the control programs. The three Regional Vocational Education Field Services Chiefs were contacted by project staff to identify food service instructors within their respective region to participate in the three workshops: one each in the western, central, and eastern regions of the Commonwealth. Teachers thus identified were sent a letter of invitation to the appropriate regional workshop and a corresponding letter was sent to their administrator requesting teacher participation in the workshop.

Twenty-six teachers were thus identified and invited to attend the workshops. Nineteen teachers accepted the invitation to participate, representing 18 different progams in 17 schools. Teachers attending the three workshops are identified with their respective schools in Figure 2.

The workshops were designed to present a general overview of the scope and contents of the draft curriculum, and the rationale and procedures used in its development. A series of activities were designed to familiarize teachers with its format and contents to enable them to locate specific materials in the lengthy draft document with ease. The agenda for these workshops is presented in Figure 3.

Securing Teacher Reaction to Use of the Draft Curriculum Guide

Curriculum Reaction Form. Teacher feedback on the usefulness of the draft curriculum guide was sought from the 25 teachers[1] who had access to the draft document during the 1976-77 school year. A one-page Curriculum Reaction Form (CRF) was developed to secure teacher reaction. A copy of this device is presented in Appendix D. The device poses a series of six open-ended statements and a section to identify the pages of the curriculum to which the reaction is addressed. The six items focus upon teacher's reaction to the content identified, ease of use, and teacher perception of student reaction to its implementation.

All 25 teachers receiving the draft curriculum guide were encouraged to use the CRF to provide the project staff with information to be used in its final revision. Five hundred copies of this device were distributed to the 25 teachers with instructions for its use in providing reactions. Copies of the CRF were distributed to the 19 teachers attending the three regional workshops, and to the six experimental program teachers by project staff visiting the schools during pretesting.

[1]The 25 teachers include six teachers in the experimental programs and 19 teachers participating in the three one-day workshops.

FIGURE 2

DATES, LOCATIONS, AND TEACHERS PARTICIPATING IN
THREE ONE-DAY WORKSHOPS TO INTRODUCE DRAFT CURRICULUM

Eastern Region

Date: 11/17/76

Location: Lehigh County A.V.T.S, Schnecksville

Participants/School: John Barri
Upper Bucks County A.V.T.S., Perkasie

Edmund L. Dale
Delaware County A.V.T.S., Aston

James J. Dale
Delaware County A.V.T.S., Aston

John Horan
Schuylkill County A.V.T.S., Pottsville

Kaye Moore
West Side A.V.T.S, Kingston

Jean Simpson
Lehigh County A.V.T.S., Schnecksville

Central Region

Date: 10/15/76

Location: Juniata-Mifflin County A.V.T.S., Lewistown

Participants/School: Don L. Alsedek
Cumberland-Perry County A.V.T.S., Mechanicsburg

William A. Barzen
Centre County A.V.T.S., Pleasant Gap

Robert H. Brown
Columbia-Montour County A.V.T.S., Bloomsburg

Jemmings Lantz
Altoona A.V.T.S., Altoona

Ted Poe
Franklin County A.V.T.S., Chambersburg

Shirley Stone
Shikellamy Senior High School, Sunbury

Eric Winkleman
Center County A.V.T.S., Pleasant Gap

FIGURE 2 (Continued)

Western Region

Date: 10/22/76

Location: Central Westmoreland County A.V.T.S., New Stanton

Participants/School: Mark Arnold
Mercer County A.V.T.S., Mercer

Dorothy A. Kopanic
Greene County A.V.T.S., Waynesburg

Karen Morrison
Cumberland Hills School, Pittsburgh

Betty Pierce
Moon Senior High School, Coroapolis

Ken Richardson
Central Westmoreland County A.V.T.S., New Stanton

Alfred Smith
Greater Johnstown A.V.T.S., Johnstown

FIGURE 3

AGENDA

EXTENSIVE TEST FOOD SERVICE CURRICULUM

Oct. 15, Oct. 22, Nov. 17, 1976

10:30 a.m.	Welcome - Get Acquainted - Introductions Overview of Project - Dr. T. Powers
11:30 a.m.	Basis for Curriculum - Learning Domains - Susan Lewis
12:00 NOON	Lunch
1:00 p.m.	Receive Curriculums
1:30 p.m.	Curriculum Familiarization Exercises - Susan Lewis Feedback and Teacher Evaluation Forms
3:30 p.m.	Adjournment

Introduction of the Draft Guide to the Advisory Committee

The Food Service Curriculum Project Advisory Committee was formed during the 1975-76 year of the curriculum development effort. The committee was composed of food service industry representatives, personnel from the Pennsylvania Department of Education, vocational education administrators, guidance and supervisory personnel, and project staff. Committee members are listed in Figure 4.

The Advisory Committee met in October 1976 to receive a briefing on the project. Copies of the draft guide were distributed to members and a brief orientation to its contents, scope, and rationale was presented. Minutes from this meeting are presented in Appendix E.

RESULTS AND FINDINGS

Evaluation of the Draft Curriculum Guide

Table 7 presents the pretest and posttest means and standard deviations for each schoolon the Competency Attainment Checklist (CAC), the Food Service Achievement Test (FSAT), and the Vocational Commitment Index (VCI). Stepwise multiple regression analyses were used to identify effects for treatment, school setting, type of school, geographic region of state, and level of testing.

Table 8 presents the results of these analyses with the F-statistic, regression coefficient, proportion of variation in the criterion variable absorbed by the independent variable, and the cumulative proportion of variation absorbed by all independent variables in the regression model at that step of the analysis. Table 9 presents descriptive data on all variables with means, standard deviations, and correlation coefficients.

Inspection of Table 7 reveals that there is considerable difference between schools on all three measures at pretest and posttest levels. Further, it is noted that in 16 of the 24[1] testing situations, an increase in the standard deviation is recorded at the posttest level, suggesting a greater disparity in student behavior at posttesting on these measures. Eleven of the 18 testing situations in experimental programs showed an increase in posttest means over pretest means, while 2 of the 6 testing situations in control programs showed such an increase.

An examination of Table 8 reveals that treatment was significantly associated with differences in the CAC (F statistic = 21.352, $p < .01$), a measure of student competency; and that treatment accounts for a

[1]School C3 is omitted from the discussion at this time due to the lack of pretest data.

FIGURE 4

COMPOSITION OF THE ADVISORY COMMITTEE

Richard D. Snyder, Jr., Chairman
Pennsylvania Restaurant Association
Education Committee
Dick's Diner
Murrysville, Pennsylvania

William Lapitsky, President
Red Barn Inns of Harrisburg
Lewisberry, Pennsylvania

Richard Benefield
General Manager and Owner
Hotel Magee
Bloomsburg, Pennsylvania

Dr. Susan Weis, Associate Professor
Home Economics Education
The Pennsylvania State University
University Park, Pennsylvania

Dr. Thomas F. Powers, Professor
Food Service and Housing Administration
The Pennsylvania State University
University Park, Pennsylvania

Carolyn Kratz, Senior Program Specialist
Home Economics Education
Bureau of Vocational Education
Department of Education
Harrisburg, Pennsylvania

Barbara Russell, Supervisory Instructional
Specialist Home Economics
Pittsburgh Public Schools
Pittsburgh, Pennsylvania

Susan C. Lewis, Research Assistant
Home Economics Education
The Pennsylvania State University
University Park, Pennsylvania

William Springer
Director of Vocational Education
Centre County A.V.T.S.
Pleasant Gap, Pennsylvania

Richard Stabler, Guidance Counselor
Central High School
Bloomsburg, Pennsylvania

TABLE 7

PRETEST AND POSTTEST MEANS AND STANDARD DEVIATIONS OF PROGRAMS ON SUBTESTS OF CAC, FSAT AND VCI

School	Subtest	Pretest $\bar{X}$	Pretest S.D.	Posttest $\bar{X}$	Posttest S.D.
E1	CAC	50.87	5.17	51.69	8.24
	FSAT	7.20	2.24	8.08	2.40
	VCI	77.53	6.38	75.39	10.90
E2	CAC	50.13	8.41	55.46	9.35
	FSAT	5.42	3.01	5.91	2.31
	VCI	69.63	7.18	68.41	17.24
E3	CAC	57.12	8.12	57.71	8.42
	FSAT	9.06	2.94	8.53	2.93
	VCI	75.24	13.72	77.24	5.32
E4	CAC	61.75	8.92	46.67	11.15
	FSAT	7.00	2.71	5.00	2.65
	VCI	76.50	5.75	75.67	17.79
E5	CAC	48.42	6.78	50.64	9.48
	FSAT	7.17	2.60	7.54	2.15
	VCI	74.06	7.59	77.57	9.78
E6	CAC	53.00	4.71	49.33	9.37
	FSAT	8.46	1.64	8.83	1.60
	VCI	73.46	4.68	74.50	4.97
All Experimental Programs	CAC	51.44	7.81	53.05	9.49
	FSAT	7.21	2.83	7.39	2.57
	VCI	73.72	8.55	74.64	12.01
C1	CAC	51.73	5.64	44.33	8.19
	FSAT	5.73	2.33	7.67	2.29
	VCI	72.91	8.29	68.00	11.24
C2	CAC	44.56	6.76	47.84	6.68
	FSAT	7.00	2.33	7.68	5.67
	VCI	72.28	11.06	70.90	8.05

TABLE 7 (Continued)

School	Subtest	Pretest $\bar{X}$	Pretest S.D.	Posttest $\bar{X}$	Posttest S.D.
C3	CAC	-	-	49.00	6.08
	FSAT	-	-	5.89	2.57
	VCI	-	-	72.44	7.65
All Control Programs	CAC	46.14	7.14	47.33	6.86
	FSAT	6.72	2.37	7.40	4.92
	VCI	72.42	10.40	70.36	8.24

TABLE 8

GENERALIZED REGRESSION ANALYSES

Criterion Variable	Independent Variables	F	b	R^2 Change	Cumulative R^2
Treatment	CAC	21.352**	-.272	.077	.077
	VCI	0.121	-.020	.000	.078
	FSAT	0.073	.015	.000	.078
			(1.135)[a]		
School Setting	VCI	5.265*	.137	.010	.010
	CAC	6.319*	-.150	.017	.027
	FSAT	7.879**	.159	.025	.052
			(.576)		
Type of School	VCI	11.454**	-.201	.026	.026
	FSAT	6.980**	-.149	.019	.045
	CAC	6.488*	.151	.020	.065
			(.502)		
Geographic Region	CAC	8.669**	-.177	.036	.036
	FSAT	.326	-.033	.001	.038
	VCI	.282	-.032	.001	.039
			(2.273)		
Pretest Posttest	VCI	.491	-.043	.001	.001
	CAC	.051	-.014	.000	.001
	FSAT	5.334*	.133	.018	.019
			(.535)		

[a]constant for the regression equation
*significant $p < .05$, df = 1,300
**significant $p < .01$, df = 1,300

TABLE 9

MEANS, STANDARD DEVIATIONS, AND CORRELATION COEFFICIENTS[a] OF ALL VARIABLES

	Criterion Variable	M	SD	1	2	3	4	5	6	7	8
1.	Treatment	.35	.48	-							
2.	School Setting	.69	.46	37**	-						
3.	Type of School	.23	.42	-06	-46**	-					
4.	Geographic Region	1.35	.74	30**	-27*	26**	-				
5.	Pretest Posttest	.43	.50	14*	-12*	06	17**	-			
6.	CAC	50.16	8.94	-28**	-09	07	-19**	02	-		
7.	FSAT	7.93	7.26	-01	16**	-15**	-05	12*	09	-	
8.	VCI	72.95	10.86	-11*	10	-16**	-09	-04	33**	07	-

[a]Decimal points are omitted on correlation coefficients.
*significant, $p < .05$
**significant, $p < .01$

slightly higher proportion of variation than the other dependent variables. However, it is noted that a considerable proportion of variation was not accounted for by the terms entering the regression equations.

All three measures show significant differences associated with school settings, or rural versus urban schools. The resulting F statistic was slightly higher for the FSAT ($F = 7.879$, $p < .01$) than for the CAC ($F = 6.319$, $p < .05$), or the VCI ($F = 5.265$, $p < .05$).

Type of school (area vocational technical school versus comprehensive high school) was also significantly associated with differences in all three measures. With this criterion variable, the F statistic emerging for the VCI was somewhat higher ($F = 11.454$, $p < .01$), than those for the FSAT ($F = 6.980$, $p < .01$), or the CAC ($F = 6.488$, $p < .05$).

Geographic region of the state (east versus central versus west) showed a significant association to differences in student competency, as measured by the CAC ($F = 8.669$, $p < .01$). Level of testing (pretest versus posttest) is significantly associated with differences in student achievement, as measured by the FSAT.

These findings were more thoroughly examined with the data on correlation coefficients contained in Table 9 to permit the following observations:

1. Implementation of the draft curriculum had some impact on student competency, as measured by the CAC, in favor of students in the experimental programs.

2. Student's vocational commitment and achievement of the knowledge base for food service, as measured by the VCI and the FSAT, respectively, tended to be higher in urban schools than in rural schools, while student competency tended to be higher in rural than urban schools.

3. Vocational commitment and food service achievement tended to be higher among students in area vocational technical schools than among students in comprehensive high schools, although the opposite appeared to be true for student competency.

4. Student competency appeared to be higher among students in the eastern region of the state than those in the western region.

5. Student achievement appeared to increase between pretest and posttest levels over all subjects.

These analyses have provided some interesting information about vocational food service programs in Pennsylvania tempering the modest findings of this study regarding the positive impact of the draft curriculum. The association between variables other than treatment revealed by this study pose some issues for further research and heighten awareness of the complexity of validating a curriculum intended for use in diverse programs in varied school settings, types of schools, and geographic locations across the state.

Limitations of the Curriculum Evaluation Analysis

Shoemaker's (1973) matrix sampling theory encourages the use of the mean item score for each subject. In this study, subtest scores represented cumulative scores for each subject which may have had a spurious effect on data entered into the regression equations and limited the potential for psychometric analysis of the data.

The Competency Attainment Checklist was intended as a device for teacher observation and evaluation of student performance. Its use in this study as a device for the student's self-reporting did not permit the matching data which would have served to strengthen confidence in the student competency data.

Examining Teacher Reaction to the Draft Curriculum

The Curriculum Reaction Form (CRF) as presented in Appendix D, sought information from 25 teachers having access to the document during the year 1976-77 on (1) section of curriculum used, (2) teacher's reaction to contents, (3) ease of use, and (4) student reaction to its use. Five hundred copies of the CRF were distributed to teachers at the onset of curriculum implementation. One hundred completed forms were received by project staff, mainly from teachers in the experimental programs. As reaction forms were received by the staff, they were reviewed and indexed in a master copy of the draft curriculum in the appropriate section of contents for each reaction.

Reactions to the draft curriculum were overwhelmingly favorable. Teacher comments that the curriculum was found to be flexible and easy to use were common; as were comments identifying a positive student reaction to learning activities presented in the guide. Teachers generally attributed an increase in student achievement of subject matter and in student competence to use of the curriculum. All 25 teachers responded that the curriculum was helpful to them in their teaching.

Several responses to the CRF were particularly gratifying to the project staff. Extremely positive reactions to the curriculum were received from one teacher who had begun teaching a new program in a new school in September 1976. This individual had relied entirely upon the draft curriculum and was hampered by a two-month delay in receiving laboratory equipment and textbooks for the new program. Two student teachers reacted at length to the curriculum; indicating it to be a very helpful guide for beginning teachers. Veteran teachers with previously-established curricula for their programs also indicated positive reactions to the curriculum.

Throughout the year the project staff made a conscientious effort to maintain communication with teachers using the draft curriculum, particularly in the experimental programs. Telephone contacts and personal visits enabled staff members to receive input regarding the curriculum. The input received in this manner was discussed among the staff and later considered in preparing the final version of the

curriculum. It is the belief of the staff that the draft curriculum was rigorously reviewed by teachers in both the experimental and extensive groups to an extent which encourages confidence in the validity and usefulness of the revised curriculum for vocational food service programs in Pennsylvania.

Revision of the Curriculum Guide

Revision of the guide was made with attention to the CRT responses, information gleaned from informal contacts with teachers involved in the project, and guidance from the Advisory Committee.

In revising the guide, major decisions were made to limit the length of the document to a single volume by eliminating task sheets and the extensive reference materials contained in the draft version. In April 1977, project staff finalized the format for the guide in a meeting with Ms. Carolyn Kratz, Senior Program Specialist, Bureau of Vocational Education, Pennsylvania Department of Education. The format permitted a single page to include key concepts, competencies, suggested activities, resources, and evaluation which had been spread over two pages in the draft guide. References were deleted from each section and replaced by a comprehensive reference section at the end of the guide. An introduction to the use of the guide was developed and the laborious task of revising the guide was underway.

As it was rewritten into the final version, input from teachers was reviewed and taken into consideration. It was necessary to completely rework the nutrition section into an applied section oriented toward nutrition education for future food service employees. In reworking this content, extensive materials related to various nutrients were condensed and reorganized.

The revised copy was typed and proofread during the summer of 1977, and went to the printers in early August of that year. By the beginning of October 1977, 500 copies had been printed. A graphics artist had designed sectional separators for each major section of the 658-page document entitled, Curriculum Guide for Food Service Instructional Programs in Pennsylvania.

Dissemination of the Revised Curriculum Guide

The revised guide was distributed to food service teachers in the Commonwealth through three, regional two-day workshops in the fall of 1977. The workshops were funded with regionally-administered E.P.D.A. monies. Seventy-one of the estimated 130 vocational food service instructors in Pennsylvania participated in these workshops and received copies of the curriculum. Additionally, copies were distributed to teacher educators in attendance at the Fall 1977 Conference of Pennsylvania Home Economics Teacher Educators, representing 14 institutions with approved teacher education programs in the Commonwealth.

Further dissemination of the guide is anticipated through copies sent to the Vocational Education Information Network at Millersville State College, and to the six regional vocational education resource centers in the nation.

A report on the project was presented at the 1977 Pennsylvania Vocational Education Conference (Lewis and Weis, 1977). Additionally, project staff members have travelled, by invitation, to Mercer, Pennsylvania, and the the Boyce Campus of the Allegheny County Community College, Monroeville, Pennsylvania, to discuss the curriculum at workshops conducted by others.

SUMMARY

This project resulted in the field testing, evaluation, and revision of the Curriculum Guide for Food Service Instructional Programs in Pennsylvania. The implementation of its 3-volume predecessor occurred in six experimental programs across the state. Three control programs provided data for contrast to determine the impact of the curriculum. Data sources included student responses to the Vocational Commitment Index (Weis and Hubbard), providing input on vocational attitudes; a Food Service Achievement Test, providing information on food service knowledge; and a Competency Attainment Checklist, which represented manipulative and psychomotor skills for food service occupations. A multiple matrix sampling technique was used to reduce the burden on subjects in data collection. Stepwise multiple regression analyses were used to identify effects for treatment, school setting, type of school, geographic region of state, and level of testing. Results of these analyses indicated that the curriculum had a significant positive impact on student competency, and revealed significant associations between all other criterion variables with the independent variables. Specifically, that higher vocational commitment and food service achievement was associated with programs in urban schools, while greater competency attainment was associated with programs in rural schools; greater commitment and achievement was associated with programs in area vocational technical schools, while higher competency attainment was associated with programs in comprehensive high schools, and programs in the eastern region of the state; and greater achievement was associated with the posttest level of testing.

Teacher reaction to the draft curriculum was solicited from the six experimental program teachers and from 19 teachers receiving copies of the guide in three one-day regional workshops held in Fall 1976. All reactions were favorable. Specific suggestions for revision of the guide were solicited and considered in preparation of the final document.

Five hundred copies of the finalized guide have been printed and are being distributed to appropriate vocational education personnel through an E.P.D.A. project.

Thus, the project has completed its objectives. The resulting curriculum guide is a useful and valid one for food service instructional programs in Pennsylvania, and may prove helpful to the estimated 3,200 programs for food service education in the nation as well.

REFERENCES

Cahen, L. S. The utilization of item sampling in evaluation studies and educational research. Research Memoradum RM-70-5. Princeton, NJ: Educational Testing Service, April 1970.

Husek, T. R. and Sirotnik, Ken. Matrix sampling. UCLA Evaluation Comment, December 1968, 1 (3), 1-4. Center for the Study of Evaluation, University of California, Los Angeles, CA.

Kuder, G. F. and Richardson, M. W. The theory of estimation of test reliability. Psychometrika, 1937, 2, 151-160.

Lewis, Susan and Weis, Susan F. Food service curriculum validation. Paper presented at the Pennsylvania Vocational Education Conference, June 1977, Lancaster, PA.

Lord, F. M. Item sampling and test theory in research design. Research Bulletin 65-22. Princeton, NJ: Educational Testing Service, 1965.

Powers, Thomas F. (Ed.) The Future of Food Service: A Basis for Planning. University Park, PA: The Pennsylvania State University, 1974.

Powers, Thomas F. The Future of Food Service: 1985-1990. University Park, PA: The Pennsylvania State University, 1975.

Powers, Thomas F.; Lewis, Susan L.; and Weis, Susan F. Food Service Curriculum Design Project. Project No. 14-6028, Pennsylvania Department of Education, Bureau of Vocational Education, Research Coordinating Unit, Harrisburg, PA, 1976.

Weis, Susan F. (Ed.) Selected Units for a Program of Vocational Food Service Education. Harrisburg, PA: Pennsylvania Department of Education, Bureau of Vocational Education, 1973.

Weis, S. F., Korkus, J. K., Bellanti, J. Final report to EPDA Subproject: Two week workshop for vocational food service teachers. Research report to Bureau of Vocational Education, Pennsylvania Department of Education, 21 pp., Sept. 1974.

Weis, Susan F.; Bellanti, John, and Korkus, Joseph. Foodservice workshop: a confluent approach to teacher education. Illinois Teacher of Home Economics, 1977, 20 (3), 136-143.

Weis, Susan F. and Hubbard, Constance F. The vocational commitment index. Home Economics Research Journal, 1973, 2 (2), 105-111.

Weis, Susan F. and Wayda, Suellen. Feasibility of Continuing Education for Secondary Food Service Instructors in Pennsylvania Based on Certification Needs, Self-Perceived Academic Needs, and Interest. Research Report, Pennsylvania Department of Education, Bureau of Vocational Education, Research Coordinating Unit, Harrisburg, PA. (1973).

Weis, Susan F. and Wayda, Suellen. (Eds.) Evaluation Devices for Voctional Foodservice Education. University Park, PA: The Pennsylvania State University, Sept. 1974.

APPENDIX A

Table 10

TABLE 10

ITEM CONTENT, ITEM DIFFICULTY VALUE, POINT-BISERIAL CORRELATION, AND t-VALUE OF 158 ITEM FSAT ADMINISTERED TO TWO GROUPS OF SUBJECTS[a] (TOTAL n = 57)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
1. Which of the following is not the duty of a salad maker? a. Prepares all salads b. Make sandwich orders as they come in *c. Cleans and prepares all vegetables d. Prepares fillings and dressings	.12	.31	2.38*
2. Which of the following is not a duty of the chef? *a. Plans and writes menus b. Develops new recipes c. Trains other food preparation workers d. Supervises product delivery	.18	-.03	-.21
3. Which employee would make sure that all food served meets the standards of the establishment? *a. Chef b. Cook's helper c. Waitress d. Food Services Manager	.18	.23	1.71
4. Which of the following employees would be doing deep fat frying and preparing eggs, friters, omelets and pancakes? a. Second Cook b. Chef c. Cook's Helper *d. Fry Cook	.63	.16	1.23

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
5. Which of the following is not a duty of the food service manager?			
a. Plan and write menus			
b. Make out work schedules			
c. Checks on food cost			
*d. Orders food	.18	.29	2.25*
6. Which of the following is not a duty of the purchasing agent?			
a. Receives and inspects food			
b. Stores food			
*c. Checks on food cost			
d. Distributes foods as needed	.16	.22	1.69
7. Which is not generally the duty of a dietitian?			
a. Plans menus with nutritional aspects uppermost in mind			
*b. Orders equipment			
c. Responsible for client health care in the field of nutrition			
d. Supervises food preparation	.93	.25	1.93
8. Which of the following is not considered a type of food service establishment?			
a. Institutional food service			
b. Vending machine			
c. Mobile food unit			
*d. All of the above are food service establishments	.67	.14	1.05
9.[d] Who in the food service establishment would handle guests' complaints?			
*a. Host or hostess			
b. Waiter or waitress			
c. Food service manager			
d. Cashier	.37	-.10	-.77

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
10. Which of the following employees is mainly responsible for welcoming and attending to the comfort of the guest? a. Waiter or waitress *b. Host or hostess c. Food service manager d. Busboy or busgirl	.81	.00	.02
11. Who is generally responsible for replenishing the side stations, coffee station, etc., in the dining room? a. Manager b. Host or hostess c. Waiter or waitress *d. Busboy or busgirl	.75	.06	.47
12. To which of the following places could a good service manager go to get information on health regulations? a. National Restaurant Foundation b. Local health department c. U.S. Department of Health, Education and Welfare *d. All of the above	.81	.07	.51
13. Which is not true about the walls and ceiling of a kitchen in a food service establishment? a. They should be washable. b. They should be free of cracks and openings around the pipes. *c. They may be painted any color. d. They must be waterproof.	.44	.31	2.39*
14. Floor racks in the dry food storage area should be removable and at least _____ off the floor. a. 2 inches b. 5 inches *c. 10 inches d. 24 inches	.28	.07	.54

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
15. Which is not true of raw foods in a food service establishment?			
*a. They may be stored directly on the floor.			
b. They should be inspected at least weekly.			
c. They must be free from insect infestations.			
d. They must be stored in covered metal containers.	.74	.08	.59
16. The temperatures in a refrigerator should not be maintained above			
*a. 40°F			
b. 50°F			
c. 100°F			
d. 20°F	.19	-.06	-.46
17. At the dishwashing area, the dishes should be washed in water that is between			
a. 90° - 100°F			
*b. 110° - 140°F			
c. 180° - 210°F			
d. 212°F	.51	.03	.23
18. The dishes should be rinsed and sterilized in water that is _____ or higher.			
a. 212°F			
*b. 180°F			
c. 150°F			
d. 100°F	.67	.48	4.07*
19. Hollandaise sauce should not be kept at room temperature more than ____ hours after it is made.			
*a. 2			
b. 4			
c. 10			
d. 24	.12	.15	1.09

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
20. How often should the guests' table tops and food preparation counters be cleaned with a sanitizing solution?			
* a. At least once a day			
b. Every time they are used			
c. Once a week			
d. Once every two weeks	.42	.09	.64
21. A manicure is care of the			
a. complexion.			
b. body.			
*c. hands and nails.			
d. clothes.	.97	.25	1.88
22. Food service employees are required by law to wash their hands after going to the bathroom in order to			
a. maintain a clean appearance.			
b. avoid dirty nails.			
c. avoid contact with germs.			
* d. prevent the spread of diseases.	.18	-.18	-1.38
23. The term "personal hygiene" is meant to refer to one's			
* a. cleanliness.			
b. good health.			
c. good posture.			
d. preparation of food.	.98	.35	2.75*
24. The term "grooming" is meant to refer to one's			
* a. personal appearance.			
b. health.			
c. care of teeth and nails.			
d. attitude.	.97	.07	.55

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
25. Which of the following signs indicates that a canned food item is spoiled?			
a. Dents in the can.			
b. Off-odor			
* c. Swollen top and bottom			
d. All of the above	.74	.28	2.14*
26. Which of the following signs indicates that left-over food is spoiled?			
a. Discoloration			
b. Off-color			
c. Mold			
* d. All of the above.	.93	.22	1.68
27. Frozen foods should be stored at a temperature of			
a. 32°F and less			
b. 10°F			
* c. 0°F or less			
d. -30°F	.54	.55	4.82*
28. Which of the following is not a condition that encourages bacteria to grow?			
a. Warmth			
b. Food			
c. Moisture			
*d. Cold	.91	.24	1.83
29. Since bacteria grow slowly at this temperature, hot foods should be heated to over ____ as fast as possible and held at or above this temperature.			
a. 50°F			
b. 100°F			
c. 120°F			
* d. 140°F	.54	.40	3.21*

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
30. Since bacteria grow slowly at these temperatures, cold food should be cooled to below ___ as fast as possible and held at this temperature.			
a. 80°F			
b. 60°F			
*c. 40°F			
d. 0°F	.74	.25	1.91
31. To prevent food poisoning and trichinosis, pork should be cooked to an internal temperature of			
a. 90°F			
b. 135°F			
* c. 170°F			
d. 200°F	.46	.48	4.03*
32. What is a Class A fire?			
* a. Combustible solids			
b. Electrical equipment			
c. Combustible metals			
d. Flammable liquids	.54	.50	4.25*
33. What is a Class B fire?			
a. Combustible solids			
b. Electrical equipment			
* c. Flammable liquids			
d. Combustible metals	.46	.07	.51
34. Which of the following extinguishers can be used only on Class A fires?			
* a. Water			
b. Foam			
c. Carbon dioxide			
d. Dry-chemical	.47	.43	3.48*

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
35. Which of the following extinguishers can be used with Class B and C fires, but not Class A fires?			
a. Foam			
* b. Carbon dioxide			
c. Water			
d. Dry-chemical	.25	.27	2.05*
36. Vitamin C may also be called			
* a. ascorbic acid.			
b. thiamine.			
c. riboflavin.			
d. biotin.	.97	.33	2.61*
37. Albumin, the protein in milk, coagulates or solidifies when _____ is applied.			
a. cold			
* b. heat			
c. pressure			
d. acid	.60	.16	1.19
38. Which of the following food items has more protein?			
* a. Hamburger, 3 oz.			
b. Carrots, 1/2 cup			
c. Brocoli, 1/2 cup			
d. Whole milk, 1 cup	.53	.37	2.92*
39. Which of the following has the most carbohydrates?			
* a. Bread, (enriched), 1 slice			
b. Margarine, 1 tsp.			
c. Skim milk, 1 cup			
d. Carrots, 1/2 cup	.77	.33	2.56*

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
40.[d] Which of the following nutrients work together with calcium to build strong bones and teeth?			
a. Vitamin A			
* b. Phosphorous			
c. Collagen			
d. Vitamin K	.49	-.07	-.50
41. Which of the following minerals helps to build strong blood?			
* a. Iron			
b. Calcium			
c. Iodine			
d. Copper	.97	.41	3.34*
42. Which of the following minerals helps to regulate the thyroid gland?			
* a. Iodine			
b. Iron			
c. Vitamin C			
d. Thiamine	.83	.36	2.86*
43. Which of the following nutrients helps to build and repair all tissues in the body?			
* a. Protein			
b. Riboflavin			
c. Vitamin K			
d. Iron	.79	.09	.66
44. Which of the following nutrients supplies energy and carries other nutrients present in food?			
* a. Carbohydrates			
b. Fats			
c. Proteins			
d. Vitamins	.51	.13	.94

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
45. How many servings of the dairy food group should teenagers have daily?			
a. 8			
* b. 4			
c. 2			
d. None	.65	.10	.74
46. How many servings from the meat group should teenagers have daily?			
a. At least 1			
* b. 2 or more			
c. 4			
d. 6	.84	.10	.74
47. Which of the following nutrients is highly damaged by contact with light, Ph, and temperature changes?			
a. Vitamin B			
b. Iodine			
c. Vitamin A			
* d. Vitamin C	.28	.28	2.12*
48. Which of the following is not a major method of cooking?			
a. Moist heat			
b. Dry heat			
c. Frying			
* d. Boiling	.37	.42	3.39*
49. Which of the following is not one of the "B" Vitamins?			
a. Thiamine			
* b. Biotin			
c. Niacin			
d. Riboflavin	.83	.39	3.12*

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
50. Which of the following foods is a good source of Vitamin C? a. Dark green vegetables * b. Citrus fruits c. milk d. meat	.97	.10	.71
51. Which of the following is a good source of Vitamin A? a. Cheeses * b. Dark green, leafy vegetables c. Meats d. Breads	.75	.27	2.07*
52. Which of the following would <u>not</u> be considered in the meat group? a. Eggs b. Chicken c. Dried beans * d. Cheese	.42	.13	.96
53. Which of the following is <u>not</u> a recommended way to help lose weight? a. Slice food thinly * b. Eat quickly c. Chew food thoroughly d. Avoid second helpings	.93	.11	.84
54. Peanut butter can be considered as a serving in the _____ food group. * a. Meat b. Milk c. Bread d. Fruit and Vegetable	.72	.03	.20

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
55. The term "enriched" means that _____ has been added to a food.			
a. water			
b. weight			
c. calories			
* d. vitamins and minerals	.98	.35	2.75*
56. What vitamin is called the sunshine vitamin because it works with sunshine to benefit our bodies?			
a. Vitamin A			
b. Vitamin B			
c. Vitamin K			
* d. Vitamin D	.65	.14	1.01
57. Which of the following vitamins would help protect against night blindness?			
* a. Vitamin A			
b. Vitamin B			
c. Vitamin C			
d. Vitamin D	.56	.07	.54
58. What part of the egg contains the most Vitamin A?			
* a. Yolk			
b. Shell			
c. White			
d. The whole egg contains Vitamin A in equal quantities.	.74	.23	1.77
59. Which of the following substances accounts for 2/3 of the body's weight?			
a. Bones			
b. Blood			
* c. Water			
d. Muscles	.88	.34	2.69*

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
60. Which of the following is a meat that contains a high quantity of iron and Vitamin A? a. Fish * b. Liver c. Chicken d. Beefsteak	.95	.14	1.07
61. Which of the following is a concentrated source of energy that contains Vitamins A, D, K, and E? * a. Fats b. Proteins c. Carbohydrates d. Cereals	.23	.19	1.47
62. Which of the following is <u>not</u> a fat-soluble vitamin? a. Vitamin A * b. Vitamin B c. Vitamin D d. Vitamin E	.51	.42	3.46*
63. The most important meal of the day that most people neglect is a. lunch. b. snacks. * c. breakfast. d. dinner.	1.00	0.0	0.0
64. Another word for lack of water in the body is a. satiety. b. obesity. * c. dehydration. d. inflammation.	.97	.23	1.71

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
65. To preserve nutrients during the preparation of vegetables which of the following procedures is appropriate?			
a. Soaking vegetables in water before cooking.			
b. Cooking vegetables in large amounts of water.			
c. Uncovering the pan while vegetables are cooking.			
* d. Keeping chopped or shredded vegetables covered before cooking.	.63	.08	.56
66. A number 10 can be substituted for			
a. 4 number 2 1/2 cans			
b. 6 number 2 cans			
* c. 3 number 5 cans			
d. 8 number 303 cans	.44	-.05	-.35
67. The dangerous temperatures which favor bacterial growth in food items are			
a. 0 to 100°F.			
* b. 45 to 140°F.			
c. 35 to 95°F.			
d. 25 to 120°F.	.63	.45	3.70*
68. Which of the following spoil <u>most rapidly</u> before and after cooking?			
a. Pork			
b. Beef			
c. Poultry			
* d. Fish and Seafoods	.63	.25	1.90
69. Salmonella is best defined as a			
a. covered pan used for steaming fish.			
b. menu item based on salmon eggs.			
c. menu item featuring fish in a cream sauce.			
* d. bacteria which flourishes in some prepared foods.	.84	.45	3.76*

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
70. The most appropriate storage for fresh leafy vegetables is a			
a. cool dry storage of 50° to 60°F.			
b. dry storage of 70°F.			
* c. refrigerated storage.			
d. freezer storage.	.77	.14	1.04
71. A proofing cabinet is used to			
a. heat baked goods.			
b. bake cakes, pies, rolls and other bakery items.			
* c. allow yeast dough products to rise.			
d. test baked goods.	.84	.42	3.40*
72. Water boils at			
a. 100°F.			
b. 150°F.			
c. 180°F.			
* d. 212°F.	.79	.43	3.57*
73. Which of the following is <u>not</u> a part of a coffee urn?			
a. Heating element			
b. Spout or spigot			
* c. Serving tray			
d. Brewing basket	.97	.40	3.20*
74. Which of the following is an example of a safe and sanitary procedure for using the coffeemaker?			
* a. Unplug coffeemaker if there is a spill over.			
b. Store cloth filter bags in warm water.			
c. Vary temperature of coffee from warm to hot to warm.			
d. Leave cleaning solution in coffeemaker overnight.	.63	.18	1.37

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
75. Which of the following is a good rule for cleaning the coffeemaker?			
a. Use scouring powder for best results.			
b. Leave coffeemaker empty after completing task.			
* c. Rinse thoroughly after cleaning.			
d. Clean the gauge glass by running hot water through it.	.90	-.06	-.41
76. Which of the following is not a rule for cleaning a tea urn?			
* a. Flush with hot soapy water.			
b. Dismantle the faucet and clean each time.			
c. Clean the urn after daily use.			
d. Delime the urn each week.	.40	.27	2.04*
77. Which of the following is not an example of a cold-beverage dispensing machine?			
a. milk machine			
b. soft ice cream and malt machine			
c. fruit juice machine			
* d. tea urn	.84	.18	1.37
78.[d] Which of the following is not a rule for operating and cleaning a cold beverage dispenser?			
a. Sanitize before each day's use and at the end of day.			
b. Drain juice from the storage section while cleaning.			
c. Rinse tanks after using a cleaning solution.			
* d. Rinse faucet and tubing with cleaning solution.	.28	-.05	-.40
79. Which of the following is a good procedure for a food service worker?			
a. Drinking remainder of malt from the mixer container.			
b. Drinking a coke while on the job dispensing beverages.			
* c. Snacking in employees' lounge.			
d. Using hands to get ice from ice maker.	.97	.10	.71

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
80. Which of the following is not a part of an ice cream machine? a. Danger light b. Drip pan * c. Heating element d. Dasher	.61	.25	1.94
81. Which of the following parts is not found on a malt mixer? a. Speed switch * b. Glass gauge c. Spindle d. Drip tray	.56	.27	2.07*
82. Which of the following should be used for cleaning the ice maker machine? a. Soft brush * b. Bristle brush c. Sponge d. Soft cloth	.09	.01	.05
83. Which of the following is not a part of a cold drink dispenser? a. Drink head b. Drink release c. Drink tray * d. Drink container	.44	.16	1.23
84.[d] Which of the following is not a procedure to follow when cleaning the diswashing machine? a. Turn the heater off before cleaning. * b. Clean drain cap and overflow vent last. c. Remove particles from the opening arms. d. Clean drain cap and overflow vent first.	.21	-.29	-2.24*

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
85. Which of the following is not a part of the dishwashing machine?			
a. Curtains			
b. Rinse-heat pipes			
c. Overflow pipe			
* d. Spindle	.68	.53	4.69*
86. Which of the following is not a proper procedure for loading the dishwasher?			
a. Water can reach all surfaces of dishes.			
b. Dishes positioned so they won't hold water.			
* c. Silverware loaded in cylinders with handles up.			
d. Avoid underloading or overloading.	.81	.47	3.94*
87. Which of the following is not a part of the pot-and-pan washing procedure?			
a. Soaking			
b. Rinsing			
c. Sanitizing			
* d. Bleaching	.94	.01	.09
88. The wash arms on the dishwasher perform what job?			
* a. Sprays soapy hot water over the dishes and utensils.			
b. Sprays disinfecting solution over dishes and utensils.			
c. Sprays soapy hot water over the machine to prevent build up.			
d. Sprays clean water over dishes and utensils.	.79	.48	4.05*
89. The rinse jets on the dishwasher perform what job?			
a. Sprays soapy hot water over the dishes and utensils.			
b. Sprays disinfecting solution over dishes and utensils.			
* c. Sprays dishes with clear hot water to sanitize them.			
d. Regulates pressure of rinsing arm.	.84	.06	.41

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
90. What is the purpose of the scrap tray on the dishwasher?			
* a. Scrapping dishes before they are placed in machine.			
b. Storing food for later use.			
c. Holding dishes and utensils.			
d. Collecting bits of food from the dishes and utensils during the washing process.	.81	.10	.71
91. What is the purpose of the detergent reservoir on the dishwasher?			
* a. Holding extra detergent which is added automatically to the wash water.			
b. Storing detergent			
c. Adding detergent if dishes are extra dirty			
d. Adding a second type of detergent	.84	.36	2.85*
92. What is the major purpose of the curtain on the dishwasher?			
a. To prevent customers from viewing the process			
* b. To keep the water from spraying outside the dishwasher			
c. To hold the dishes and utensils			
d. To decrease noise during operation	.81	.51	4.43*
93. What is the purpose of the racks in the dishwasher?			
a. For storage			
* b. For holding the dishes and utensils			
c. For stacking extra heavy items			
d. For use when an extra high temperature is needed	.97	.23	1.71
94. What is the function of the heater in the dishwasher?			
* a. Heats water to proper temperature for final rinse			
b. Heats water to proper temperature for first rinse			
c. Heats work area			
d. Heats water for wash cycle	.39	.27	2.05*

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
95. Which of the following is not a purpose of storing food in the refrigerator freezer?			
a. To prevent spoilage			
b. To improve the taste of some foods			
c. To improve texture of foods			
* d. To improve the color of foods	.47	.18	1.37
96. Which of the following is not important in the care of a refrigerator or freezer?			
* a. Change temperature daily			
b. Clean up spills immediately			
c. Use soda instead of detergents for cleaning			
d. Check temperature gauges daily	.88	.21	1.61
97. Which of the following terms does not apply to refrigeration of food?			
a. Vapor moisture-proof paper			
b. Thaw			
c. Hydrator			
* d. Spindle	.88	.30	2.37*
98. Which of the following foods cannot be cut with a food chopper?			
a. Cabbage			
b. Dry bread			
c. Ham			
* d. Fresh fish	.74	.07	.50
99. Which of the following is not a part of the food slicer?			
a. Food carriage			
b. Gauge plate			
* c. Drain tray			
d. Receiving tray	.65	.26	1.97

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
100. Which of the following is not a part of the food chopper?			
a. Bowl guard			
b. Bowl			
* c. Bowl drain			
d. Blade	.74	.24	1.82
101. Which of the following are not parts of a salad-station unit?			
a. Sink and cleaning unit			
b. Chopping board			
c. Drain boards			
* d. Heating units	.95	.30	2.29*
102. Which of the following is not a proper procedure for cleaning the salad-station unit?			
a. Sanitize at end of each shift			
b. Delime twice a week			
c. Rinse sink with solution that reduces bacteria			
* d. Spray area with solution that eliminates odor	.58	.14	1.08
103. Which of the following is not part of a sandwich station?			
a. Cutting board			
b. Refrigerated compartment			
c. Storage compartment			
* d. Drink compartment	.98	.33	2.57*
104. Which of the following is not a type of hot food holding unit?			
a. Steam serving table			
b. Infra-red lamp			
c. Dry heat serving table			
* d. Range	.81	.46	3.80*

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
105. Which of the following is an advantage of an infra-red lamp for holding hot foods?			
* a. It is portable.			
b. It does not dry foods out.			
c. It holds all types of foods.			
d. It reduces food shrinkage.	.23	.28	2.15*
106. Which of the following is an advantage of a steam serving table?			
* a. It holds all types of foods.			
b. It does not need to be preheated.			
c. The water does not need to be drained.			
d. It allows no chance of overcooking or sogginess.	.47	.36	2.83*
107. Which of the following is an advantage of a dry heat table for holding foods?			
* a. Its temperature is easily controlled.			
b. Food does not dry out when it is used.			
c. It reduces food shrinkage.			
d. It allows no possiblity of burns to employees.	.75	.44	3.66*
108.[d] Which of the following is an advantage of bun warmers?			
a. Holds all types of foods			
b. Holds large quantities of foods			
* c. Easy to clean			
d. Temperature is easily controlled	.16	-.17	1.31
109. Water in the steam table should be kept at what temperature?			
a. 100°F			
* b. 140°F			
c. 180°F			
d. 212°F	.42	-.23	-1.72

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
110. Which of the following is not a part of the food mixer?			
a. Pedestal			
* b. Drain tray			
c. Bowl clamp			
d. Beater shaft	.79	.49	4.19*
111. Which of the following is not a mixer attachment?			
a. Whip			
b. Pastry knife			
c. Dough hook			
* d. Knife sharpener	.74	.18	1.36
112. Which of the following is not a safety precaution for using the food mixer?			
a. Select the correct bowl for the type of mixture and then select the correct beater			
b. Be sure to fasten bowl and beater before starting the motor			
* c. Be careful when putting hand or utensils into bowl while it is in operation			
d. Use a rubber scrapper to scrape down sides of bowl to remove food from beater	.49	.39	3.10*
113. Which of the following may not be used in cooking in a micro-wave oven?			
a. Glass			
* b. Metal			
c. Paper			
d. Plastic	.68	.37	2.93*
114. Which of the following is not true regarding the use of a steam-jacketed kettle?			
* a. Tap water should be used in a steam kettle			
b. The amount of steam-operation pressure will be stamped on the front			
c. Directions for the removal of air will be printed on the front			
d. If the pressure goes in the 30-40 range some steam must be released	.26	.31	2.39*

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
115. Which of the following is not true regarding the cleaning of a steam kettle?			
a. Immediately after using fill with hot soapy water and let soak			
* b. Scrub with a steel wool pad			
c. Scrub with a stiff brush			
d. Scrub with a soft cloth	.49	.36	2.85*
116. Which of the following is not considered a surface cooking method?			
* a. Oven			
b. Griddle			
c. Deep fat fryer			
d. Char-broiler	.51	.23	1.78
117. Which of the following is not a part of a commercial toaster?			
a. Heating element			
b. Crumb tray			
* c. Holding tray			
d. Browness regulator	.83	.33	2.61*
118. Which of the following is not a part of a bench-type manual can opener?			
a. Handle			
* b. Switch			
c. Shank			
d. Base	.75	.44	3.66*
119[d] Which of the following terms does not apply to small cleaning equipment?			
a. Push broom			
b. Laundry basket			
c. Mop head			
* d. Vacuum	.44	-.11	-.80

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
120. Which of the following is not a serving utensil?			
a. Tongs			
b. Spatula			
c. Scoop			
* d. Pie marker	.90	.34	2.64*
121. Which of the following is not flatware?			
* a. Tongs			
b. Fork			
c. Teaspoon			
d. Iced Teaspoon	1.00	0.0	0.0
122. Which of the following terms does not apply to food decorating equipment?			
* a. Placemat			
b. Cookie press			
c. Paper cone			
d. Pastry bag	.90	.30	2.31*
123. Which of the following is not true about a baker's scale?			
* a. It measures up to 24 pounds			
b. It has two platforms			
c. The beam is divided into 64 units			
d. A weight is attached to the beam	.47	.29	2.20*
124. Which of the following is not a safety practice in using cutlery?			
a. Use a cutting board when possible			
* b. A dull knife is safer to use than a sharp knife			
c. Never hold a knife by the blade			
d. Always hold a knife with the point down	.90	.33	2.60*

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
125. Persons in charge of food storage areas should check for all of the following except			
a. that the merchandise is used before spoiling.			
b. that the equipment is in good working order.			
* c. that the customers like the products.			
d. that the proper temperatures are maintained.	.84	.20	1.48
126. Which of the following terms means to cook over steam rising from boiling water?			
a. Scald			
* b. Steam			
c. Simmer			
d. Saute	.65	.32	2.53*
127. Which of the following terms means the main course of a meal?			
a. Jus			
b. Hors d'oeuvres			
* c. Entree			
d. Escallop	.90	.56	4.99*
128. Which of the following measures equals one cup?			
* a. 1/2 pint			
b. 1 pint			
c. 1 quart			
d. 4 tablespoons	.90	.34	2.64*
129. Which of the following measures equals one pound?			
a. 1.06 quarts			
b. 2.04 centimeters			
* c. 454 grams			
d. one kilogram	.86	.36	2.81*

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
130. In a commercial operation, sugar is measured by			
a. the liter.			
b. the meter.			
* c. the gram.			
d. the quart.	.70	.19	1.43
131. Standardized recipes aid in all of the following except			
a. control of quality.			
b. control of quantity.			
c. control of costs.			
* d. control of customer satisfaction.	.65	.34	2.68*
132. Which of the following could cause a yeast bread product to be too dark?			
a. Too much sugar			
b. Insufficient rising time			
c. Oven temperature too high			
* d. All of the above	.61	-.01	-.05
133. Which of the following could cause "cracks" in a yeast bread product?			
a. Too much sugar			
b. Not enough salt			
* c. Crushing of dough during rising			
d. Overkneading	.14	-.41	-3.31*
134.[d] Which is the name for the process of yeast multiplying and converting glucose to carbon dioxide?			
a. leavening			
b. liquifying			
c. proofing			
* d. fermentation	.63	-.19	-1.45

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
135. What is the name of the process of folding dough from sides to middle until most of its gas is exspelled?			
a. Bench and rest			
* b. Punching			
c. Proofing			
d. Kneading	.11	.09	.63
136. What is the name for the process of allowing the dough to rest and the gluten to develop?			
a. Make-up			
b. Rounding			
* c. Proofing			
d. Bench and rest	.70	.63	5.97*
137. Eggs in the shell should be kept at temperatures ranging from			
a. 12° - 24°F			
* b. 28° - 68°F			
c. 50° - 52°F			
d. 75° - 85°F	.40	.10	.76
138. Which of the following is <u>not</u> a grade of eggs?			
a. AA			
b. A			
c. B			
* d. D	.84	.32	2.53*
139. The term "pasta" is used to refer to			
a. all types of spaghetti.			
b. noodles and rice only.			
c. Italian shaped noodles.			
* d. all types of macaroni, spaghetti and noodles.	.91	.08	.57

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
140. A good rule of thumb in cooking pasta is _____ parts salted water to one part pasta.			
a. 5			
* b. 4			
c. 3			
d. 2	.21	.03	.21
141. Which of the following is the reason why cheese is often used in food service?			
a. There is very little waste involved.			
b. It is an economical substitute for meat dishes.			
c. It supplies the body with essential nutrients.			
* d. All of the above.	.86	.22	1.66
142. Which of the following is a cause of soggy lower crust on pies?			
a. The dough was overhandled.			
b. The oven temperature was too low.			
c. The oven heat was uneven.			
* d. All of the above.	.72	.07	.55
143. What is the cause of a tough pie crust?			
* a. Insufficient shortening was used.			
b. The oven temperature was too high.			
c. Too much shortening was used.			
d. The pastry was rolled too thin.	.56	.17	1.25
144. Veal is a meat from a young			
a. goat.			
b. lamb.			
c. pig.			
* d. cow.	.67	.28	2.17*

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
145. U.S.D.A. grading of poultry and game is based upon			
a. conformation.			
b. distribution of fat.			
c. condition of skin and general appearance.			
* d. All of the above.	.83	.18	1.38
146. A thin liquid resulting from boiling meat or bones is a			
a. soup.			
* b. stock.			
c. bouillon.			
d. base.	.63	.46	3.85*
147. The mixture of fat and flour used in cream soups is a			
a. base.			
b. bouillon.			
* c. roux.			
d. stock.	.58	.50	4.32*
148. Which of the following is a small cube of hardened seasoned bread?			
* a. Crouton			
b. Fondue			
c. Bisque			
d. Chowder	1.00	0.0	0.0
149. What is the word for an ornament or decoration for a food item?			
a. Entree			
b. Touch-up			
* c. Garnish			
d. Glaze	.98	.33	2.57*

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
150. Little foods or snacks served before a meal or at a party are called a. canapes. * b. hors d'oeuvres. c. parisiennes. d. sprigs.	.88	.01	.09
151. What is the proper term for the clearing of tables and dining area? a. Clearing b. Cleaning up * c. Bussing d. Service	.90	.50	4.26*
152. Another word used for items like mustard, mayonnaise and ketchup is a. garnishes. * b. condiments. c. sauces. d. additives.	.86	.47	3.97*
153. In a standard dinner setting the fork is placed * a. to the left of the plate. b. to the right of the plate. c. above the water glass. d. beside the knife.	.86	.26	2.00
154.[d] What is the word for the money the guest leaves in appreciation for the service? a. Check b. Token * c. Tip d. Bill	.98	-.04	-.32

TABLE 10 (Continued)

Item Content[b]	Item Difficulty	Point-Biserial Correlation	t-Value[c]
155. What is room service?			
a. Food served in a particular area of a restaurant.			
b. Food service in a hospital.			
* c. Food brought to the rooms in a hotel or motel.			
d. Food service in schools or institutions.	.98	.35	2.75*
156. What is the total of the following guest check? Hamburger . . . . 80¢ French Fries. . . 30¢ Coke. . . . . 25¢ TOTAL			
a. $1.10			
b. $1.15			
c. $1.25			
* d. $1.35	1.00	0.0	0.0
157. Pennsylvania state tax of 6% would amount to _____ on a bill of $2.80.			
a. 14.0¢			
b. 15.0¢			
* c. 16.8¢			
d. 19.5¢	.79	.19	1.40
158. What is the total of the following guest check? Chicken. . . $2.95 Corn . . . . .35 Pie. . . . . .40 Milk . . . . .20 Coffee . . . .10 TOTAL			
a. $2.05			
b. $3.00			
c. $3.95			
*d. $4.00	.93	.24	1.84

TABLE 10 (Concluded)

[a]Subgroup I comprised 30 undergraduates in a food service major, and Subgroup II comprised 27 undergraduates in home economics education.

[b]Correct answer indicated by asterisk to left of option.

[c]Asterisk beside t-Value indicative of a significance $p < .05$.

[d]Items eliminated in subtests.

APPENDIX B

Instruments Used in Data Collection

A

Directions: Read each item and judge how well it describes your feelings about the job you are preparing for in your vocational classes. If the item describes your feelings very closely, place an X in the blank headed Strongly Agree. If the item describes your feelings closely, place an X in the space headed Agree. If the item does not describe your feelings closely, place your X in the Disagree blank. If the item describes feelings which are definitely not like yours, place your X in the Strongly Disagree blank.

	Strongly Agree	Agree	Disagree	Strongly Disagree
1. I exert large amounts of energy when I am working on my job.				
2. On my job, work is fun and interesting.				
3. When I leave work at the end of the day, I feel that I have done something worthwhile.				
4. I feel badly if I have to miss work when I am ill.				
5. Before I started this job, I could picture myself doing this type of work.				
6. I see myself as having most of the necessary skills for my job.				
7. I feel good about my work on the job.				
8. I feel that if something changes within my occupation, I personally must also make changes within myself.				
9. I think about some of the mistakes I have made on the job when I am relaxing.				
10. I see myself as one of "the group" of workers in this particular occupation.				
11. I have spent some of my own money on equipment and materials to help me in my job.				
12. I try to perfect my job skills.				
13. I work hard at this job in order to gain advancements.				
14. I am more satisfied with my job when things go well.				

A-2

	Strongly Agree	Agree	Disagree	Strongly Disagree
15. I refer to the place I work as "my restaurant," etc.	___	___	___	___
16. I try to follow the example of leaders in this occupation.	___	___	___	___
17. I participate in activities related to my work such as a union.	___	___	___	___
18. I try to act as people expect a person doing my job to act.	___	___	___	___
19. I am interested in what my co-workers do on the job.	___	___	___	___
20. I work well with the other employees on the job.	___	___	___	___
21. My job interests me in a variety of ways.	___	___	___	___
22. Many of the people I work with are also personal friends.	___	___	___	___
23. I am confident that I can do anything in my job that my supervisor would ask of me.	___	___	___	___
24. When someone criticizes my occupation, I personally feel they are criticizing me.	___	___	___	___

B

Directions: Read each item and judge how well it describes your feelings about the job you are preparing for in your vocational classes. If the item describes your feelings very closely, place an X in the blank headed Strongly Agree. If the item describes your feelings closely, place an X in the space headed Agree. If the item does not describe your feelings closely, place your X in the Disagree blank. If the item describes feelings which are definitely not like yours, place your X in the Strongly Disagree blank.

		Strongly Agree	Agree	Disagree	Strongly Disagree
1.	I do my part of the job and expect everyone else to do their part.	___	___	___	___
2.	I have no desire to leave this job for any reason.	___	___	___	___
3.	I experience an unhappy feeling when things go wrong on my job.	___	___	___	___
4.	I continue to learn interesting things about my work.	___	___	___	___
5.	I try to live up to my supervisor's expectations for performance in my job.	___	___	___	___
6.	I defend my job when someone else criticizes it.	___	___	___	___
7.	My job is important to me.	___	___	___	___
8.	I feel very close to my occupation.	___	___	___	___
9.	I am willing to work overtime.	___	___	___	___
10.	I feel like doing more work when I am happy with my job.	___	___	___	___
11.	I accept changes within my job readily.	___	___	___	___
12.	Although I do not always agree with the changes made in my job, I try to make the most of them.	___	___	___	___
13.	My co-workers take an interest in my work.	___	___	___	___
14.	I spend some of my free time trying to improve myself on the job by reading about it in related magazines.	___	___	___	___

B-2

		Strongly Agree	Agree	Disagree	Strongly Disagree
15.	I cooperate with my co-workers.	___	___	___	___
16.	I have respect for the other people on this job.	___	___	___	___
17.	I study what my co-workers do so that I can progress in this occupation.	___	___	___	___
18.	I do not have to worry about being moved to different jobs within the company.	___	___	___	___
19.	Although it has its faults, the good points about my job are most important to me.	___	___	___	___
20.	Doing this job comes very natural to me.	___	___	___	___
21.	I go along with the rules and regulations set up by the company.	___	___	___	___
22.	I am taking courses to help me advance in this occupation.	___	___	___	___
23.	I find that the longer I work at this job, the more it becomes a part of me.	___	___	___	___
24.	I feel that my job is quite permanent.	___	___	___	___
25.	My job requires mental ability.	___	___	___	___

C

Directions: Read each item and judge how well it describes your feelings about the job you are preparing for in your vocational classes. If the item describes your feelings very closely, place an X in the blank headed Strongly Agree. If the item describes your feelings closely, place an X in the space headed Agree. If the item does not describe your feelings closely, place your X in the Disagree blank. If the item describes feelings which are definitely not like yours, place your X in the Strongly Disagree blank.

		Strongly Agree	Agree	Disagree	Strongly Disagree
1.	I belong to organizations related to my occupational field.	___	___	___	___
2.	I am proud of what I can accomplish in my job.	___	___	___	___
3.	I rarely miss work.	___	___	___	___
4.	I take part in workshops or programs to help me do a better job.	___	___	___	___
5.	In my occupation, the work is interesting and enjoyable.	___	___	___	___
6.	I will keep this job until retirement.	___	___	___	___
7.	I find there is always something new to learn about my job.	___	___	___	___
8.	I am proud to tell people what kind of a job I have.	___	___	___	___
9.	My work results in benefits to many people.	___	___	___	___
10.	I am able to express my creative talents in this occupation.	___	___	___	___
11.	If I were just starting to work for the first time, I would choose this same occupation.	___	___	___	___
12.	I am enthusiastic about my job.	___	___	___	___
13.	I can change myself to meet the varied demands of my job.	___	___	___	___
14.	I see myself as progressing from this job to jobs which are better within this occupation.	___	___	___	___

C-2

	Strongly Agree	Agree	Disagree	Strongly Disagree
15. I am taking courses to help me perform in my job.	___	___	___	___
16. I like my occupational field better than any others that I could enter.	___	___	___	___
17. I never criticize my job to other people.	___	___	___	___
18. This job really makes me feel like I am someone important or special.	___	___	___	___
19. I am not pleased with myself if I cannot do the things required of me on my job.	___	___	___	___
20. My job is a specialized one that very few people could do without some type of training.	___	___	___	___
21. I find myself believing in and working for the same things that most people in this occupation want.	___	___	___	___
22. My job requires physical energy and strength.	___	___	___	___
23. I know that my job is important to the success of the entire operation.	___	___	___	___
24. I am pleased when I do more work than that which was expected of me.	___	___	___	___
25. My job is challenging and interesting to me.	___	___	___	___

Student Directions: Read each statement carefully and decide if you can do the activity described. If you cannot do the activity, circle UP; if you can do the activity, circle AP; and if you can do the activity easily and thoroughly, circle OP.

Remember: cannot do = UP; can do = AP; can do easily = OP.

1.1	Identify major cleaning equipment in a commercial kitchen.	UP	AP	OP
1.2	Initiate safety measures in using and maintaining the refrigerator and freezer.	UP	AP	OP
1.3	Identify types of range tops.	UP	AP	OP
1.4	Perfect techniques for use and care of the broiler.	UP	AP	OP
1.5	Choose safe procedures in the use and care of utensils.	UP	AP	OP
1.6	Perform a specific task with small cleaning equipment.	UP	AP	OP
1.7	Identify beverage containers used in food service.	UP	AP	OP
1.8	Perform assigned tasks operating the slicer.	UP	AP	OP
1.9	Perform a specific task correctly using appropriate linens.	UP	AP	OP
1.10	Identify factors which lead to unsafe conditions in commercial food facilities.	UP	AP	OP
1.11	Cite personal habits of a food-service worker that prevent the spread of disease.	UP	AP	OP
1.12	Apply correct storage procedures for clean dishes.	UP	AP	OP
1.13	Define common food production terms.	UP	AP	OP
1.14	Solve food-portioning problems.	UP	AP	OP
1.15	Demonstrate use of equivalent measures.	UP	AP	OP
1.16	Prepare cold sandwiches in quantity using correct procedures.	UP	AP	OP
1.17	Prepare a recipe for yeast breads.	UP	AP	OP
1.18	Cite types of pie fillings.	UP	AP	OP

CAC 1

1.19	Produce various milk desserts.	UP	AP	OP
1.20	Prepare meats, poultry and fish by moist heat and dry heat methods.	UP	AP	OP
1.21	Define the term "garnish" as used in food service.	UP	AP	OP
1.22	Demonstrate the set up for buffet service.	UP	AP	OP
1.23	Correctly pronounce and define menu and food terms.	UP	AP	OP
1.24	Demonstrate acceptable procedures when an accident occurs.	UP	AP	OP
1.25	Identify appropriate procedures for handling money.	UP	AP	OP

CAC 2

Student Directions: Read each statement carefully and decide if you can do the activity described. If you cannot do the activity, circle UP; if you can do the activity, circle AP; and if you can do the activity easily and thoroughly, circle OP.

Remember: cannot do = UP; can do = AP; can do easily = OP.

2.1	Carry out the procedure for safe operation of the dishwasher.	UP	AP	OP
2.2	Perform assigned tasks using the hot food holding and serving unit.	UP	AP	OP
2.3	Apply safe procedures for operation and care of the range.	UP	AP	OP
2.4	Apply safe procedures for use and care of the hood and fan.	UP	AP	OP
2.5	Identify pots and pans used in food service.	UP	AP	OP
2.6	Display a desire to use small cleaning equipment in a safe and efficient manner.	UP	AP	OP
2.7	Demonstrate correct procedures for use and care of beverage containers.	UP	AP	OP
2.8	Safely operate and clean the food chopper.	UP	AP	OP
2.9	Display a desire to use and care for linens correctly.	UP	AP	OP
2.10	Apply accident-preventions procedures in the commercial food facility.	UP	AP	OP
2.11	Carry out correct hand washing procedures.	UP	AP	OP
2.12	Identify forms used in receiving food.	UP	AP	OP
2.13	Describe procedures indicated by food production terms.	UP	AP	OP
2.14	Measure portions quickly and accurately.	UP	AP	OP
2.15	Demonstrate use of metric measures.	UP	AP	OP
2.16	Produce high-quality hot sandwiches using correct procedures.	UP	AP	OP
2.17	Demonstrate making crumbs.	UP	AP	OP
2.18	Prepare the three basic varieties of pies.	UP	AP	OP

2.19	Name types of gelatin desserts.	UP	AP	OP
2.20	Cite the uses of eggs in meal production.	UP	AP	OP
2.21	Garnish foods using the proper techniques.	UP	AP	OP
2.22	Display a desire to use the correct placement of table appointments for courses and for service.	UP	AP	OP
2.23	Demonstrate ability to take and write an order using correct procedures.	UP	AP	OP
2.24	Demonstrate the correct procedure for presenting the check.	UP	AP	OP
2.25	Demonstrate the procedure for verifying cash on hand.	UP	AP	OP

CAC 3

Student Directions: Read each statement carefully and decide if you can do the activity described. If you cannot do the activity, circle UP; if you can do the activity, circle AP; and if you can do the activity easily and thoroughly, circle OP.

Remember: cannot do = UP; can do = AP; can do easily = OP.

3.1	Demonstrate the proper techniques for cleaning the dishwashing machine.	UP	AP	OP
3.2	Perform assigned tasks related to each cold food holding and serving unit studied.	UP	AP	OP
3.3	Perform assigned tasks in operating a range.	UP	AP	OP
3.4	Perform assigned task related to the exhaust hood and fan.	UP	AP	OP
3.5	Describe uses for specific pots and pans.	UP	AP	OP
3.6	Identify decorating equipment used in food service.	UP	AP	OP
3.7	Identify trays and carts used in food service.	UP	AP	OP
3.8	Perform assigned tasks operating the food chopper.	UP	AP	OP
3.9	Operate a commercial can opener with safety and efficiency.	UP	AP	OP
3.10	Adopt procedures for handling selected emergency situations.	UP	AP	OP
3.11	Practice personal sanitation appropriate to a commercial food service employee.	UP	AP	OP
3.12	Use correct procedures in receiving food.	UP	AP	OP
3.13	Follow procedures indicated by food production terms.	UP	AP	OP
3.14	Choose portioning techniques which ensure equal servings to all customers.	UP	AP	OP
3.15	Define "recipe".	UP	AP	OP
3.16	Apply correct procedures for making salads.	UP	AP	OP
3.17	Identify the basic varieties of sauces.	UP	AP	OP
3.18	Identify basic types of cake.	UP	AP	OP

3.19	Apply proper procedures for making gelatin desserts.	UP	AP	OP
3.20	Follow correct procedures in using various forms of eggs.	UP	AP	OP
3.21	Identify types of appetizers.	UP	AP	OP
3.22	Identify employee characteristics which contribute to customer satisfaction.	UP	AP	OP
3.23	Demonstrate ability to pass an order to kitchen correctly.	UP	AP	OP
3.24	Demonstrate correct procedures for presenting a check using a change tray.	UP	AP	OP
3.25	Prepare the change bank.	UP	AP	OP

CAC 4

Student Directions: Read each statement carefully and decide if you can do the activity described. If you cannot do the activity, circle UP; if you can do the activity, circle AP; and if you can do the activity easily and thoroughly, circle OP.

Remember: cannot do = UP; can do = AP; can do easily = OP.

4.1	Execute proper techniques for operating the disposal.	UP	AP	OP
4.2	Choose to safely use and care for cold and hot holding and serving units.	UP	AP	OP
4.3	Operate the griddle using proper procedures for its operation and care.	UP	AP	OP
4.4	Show continued desire to properly maintain the hood.	UP	AP	OP
4.5	Display continuing desire to use, store and care for pots and pans in a safe manner.	UP	AP	OP
4.6	Perform specific tasks with the pastry bag and pastry tube.	UP	AP	OP
4.7	Demonstrate safe and efficient use of a tray or cart.	UP	AP	OP
4.8	Demonstrate steps in operating a commercial toaster.	UP	AP	OP
4.9	Display continued desire to properly operate and maintain the can opener.	UP	AP	OP
4.10	Describe methods of extinguishing various kinds of fires.	UP	AP	OP
4.11	Display sanitary and safe handling of foods.	UP	AP	OP
4.12	Demonstrate ability to store food properly.	UP	AP	OP
4.13	Carry out procedures for cleaning the salad station.	UP	AP	OP
4.14	Define "convenience foods".	UP	AP	OP
4.15	Name the parts of a recipe.	UP	AP	OP
4.16	Create new ways of garnishing a salad.	UP	AP	OP
4.17	Demonstrate preparation of various types of sauces.	UP	AP	OP
4.18	Prepare a cake using appropriate techniques.	UP	AP	OP

4.19	Identify varieties of cereals prepared in commercial food establishments.	UP	AP	OP
4.20	Carry out proper techniques for preparing egg dishes.	UP	AP	OP
4.21	Prepare appetizers using correct techniques.	UP	AP	OP
4.22	Display desirable employee characteristics.	UP	AP	OP
4.23	Demonstrate procedures for picking up an order from the kitchen.	UP	AP	OP
4.24	Display proper demeanor in receiving tips.	UP	AP	OP
4.25	Demonstrate procedures for accepting payment of a check.	UP	AP	OP

CAC 5

Student Directions: Read each statement carefully and decide if you can do the activity described. If you cannot do the activity, circle UP; if you can do the activity, circle AP; and if you can do the activity easily and thoroughly, circle OP.

Remember: cannot do = UP; can do = AP; can do easily = OP.

5.1	Practice proper techniques for using and cleaning the pot and pan sink.	UP	AP	OP
5.2	Use and care for the commercial mixer using proper procedures.	UP	AP	OP
5.3	Perform assigned tasks using the griddle.	UP	AP	OP
5.4	Apply safe procedures for use and care of steam cookery equipment.	UP	AP	OP
5.5	Identify the measuring equipment used in food preparation.	UP	AP	OP
5.6	Perform a specific task with the paper cone.	UP	AP	OP
5.7	Identify tableware used in food service.	UP	AP	OP
5.8	Carry out the steps for operating and cleaning the waffle iron.	UP	AP	OP
5.9	Identify the cutting devices used in food service.	UP	AP	OP
5.10	Demonstrate proper use of fire extinguisher.	UP	AP	OP
5.11	Carry out appropriate standards of sanitation in the care of furniture surfaces.	UP	AP	OP
5.12	Accept responsibility for storing food properly.	UP	AP	OP
5.13	Carry out procedures for cleaning the baker's table.	UP	AP	OP
5.14	Use the basic mix as a convenience food.	UP	AP	OP
5.15	Use a recipe correctly.	UP	AP	OP
5.16	Produce quantity salad dressing using correct procedures.	UP	AP	OP
5.17	Define the term "gravy".	UP	AP	OP
5.18	Identify basic mixing methods of frosting.	UP	AP	OP
5.19	Apply proper techniques in cereal cookery.	UP	AP	OP
5.20	Identify basic types of cheeses.	UP	AP	OP

5.21	Identify the table appointments that make up a cover.	UP	AP	OP
5.22	Choose suitable actions to take in a difficult situation with co-workers, employer, or customers.	UP	AP	OP
5.23	Execute correct procedures for loading, lifting, carrying and bringing down a tray.	UP	AP	OP
5.24	Define "counter service".	UP	AP	OP
5.25	Demonstrate the ability to handle money.	UP	AP	OP

Student Directions: Read each statement carefully and decide if you can do the activity described. If you cannot do the activity, circle UP; if you can do the activity, circle AP; and if you can do the activity easily and thoroughly, circle OP.

Remember: cannot do = UP; can do = AP; can do easily = OP.

6.1	Carry out procedures for proper operation and cleaning of coffee maker.	UP	AP	OP
6.2	Adopt safe procedures for using and cleaning the blender.	UP	AP	OP
6.3	Operate and care for the deep fat fryer.	UP	AP	OP
6.4	Perform assigned tasks using steam cookery equipment.	UP	AP	OP
6.5	Relate correct measuring equipment to task.	UP	AP	OP
6.6	Display a continuing desire to decorate food items in an attractive manner.	UP	AP	OP
6.7	Demonstrate safe, sanitary handling of tableware.	UP	AP	OP
6.8	Identify linens used in food service.	UP	AP	OP
6.9	Relate the correct knife to a specific task.	UP	AP	OP
6.10	Define "sanitation".	UP	AP	OP
6.11	Follow appropriate procedures for floor care in a commercial food establishment.	UP	AP	OP
6.12	Demonstrate ability to take inventory.	UP	AP	OP
6.13	Follow correct procedures for cleaning the sandwich station.	UP	AP	OP
6.14	Prepare an assigned food product using convenience foods.	UP	AP	OP
6.15	Demonstrate ability to locate and file recipes.	UP	AP	OP
6.16	Identify the most common vegetables and fruits.	UP	AP	OP
6.17	Demonstrate correct procedures in making gravy.	UP	AP	OP
6.18	Prepare a frosting using appropriate techniques.	UP	AP	OP
6.19	Identify foods that are considered pasta.	UP	AP	OP

6.20	Demonstrate storage techniques for cheeses.	UP	AP	OP
6.21	Demonstrate the correct placement for dishes, glassware and flatware for a cover.	UP	AP	OP
6.22	Identify the duties of food service personnel in serving customers.	UP	AP	OP
6.23	Demonstrate the correct procedure for serving food.	UP	AP	OP
6.24	Employ counter service.	UP	AP	OP
6.25	Demonstrate accuracy in handling money.	UP	AP	OP

CAC 7

Student Directions: Read each statement carefully and decide if you can do the activity described. If you cannot do the activity, circle UP; if you can do the activity, circle AP; and if you can do the activity easily and thoroughly, circle OP.

Remember: cannot do = UP; can do = AP; can do easily = OP.

7.1	Carry out procedures for using and maintaining the tea urn.	UP	AP	OP
7.2	Identify the basic types of commercial ovens.	UP	AP	OP
7.3	Develop work simplification methods for using the deep fat fryer.	UP	AP	OP
7.4	Display continued desire to properly maintain the steam cookery equipment.	UP	AP	OP
7.5	Display responsibility for the proper care of measuring equipment.	UP	AP	OP
7.6	Identify serving utensils used in food service.	UP	AP	OP
7.7	Relate the correct serving equipment to a task.	UP	AP	OP
7.8	Demonstrate correct procedures for removing a specific stain from linen.	UP	AP	OP
7.9	Demonstrate safety practices to be followed in the use and care of knives.	UP	AP	OP
7.10	Summarize sanitation laws affecting food service facilities.	UP	AP	OP
7.11	Maintain sanitary commercial food service facilities.	UP	AP	OP
7.12	Employ correct procedure for issuing food.	UP	AP	OP
7.13	Identify factors related to high quality food production.	UP	AP	OP
7.14	Perform specific tasks in food service using convenience foods.	UP	AP	OP
7.15	Illustrate sanitary procedure for tasting food.	UP	AP	OP
7.16	Demonstrate correct methods of cleaning vegetables and fruit.	UP	AP	OP
7.17	Identify the major types of soups.	UP	AP	OP
7.18	Demonstrate procedure for frosting a cake.	UP	AP	OP

7.19	Follow correct procedures for cooking pasta.	UP	AP	OP
7.20	Follow proper techniques for cheese cookery.	UP	AP	OP
7.21	Identify types of service used in restaurants and commercial dining rooms.	UP	AP	OP
7.22	Demonstrate the procedure for a host or hostess in welcoming the guest.	UP	AP	OP
7.23	Define booth service.	UP	AP	OP
7.24	Define "cafeteria service".	UP	AP	OP
7.25	Demonstrate procedures for accepting checks and credit cards.	UP	AP	OP

CAC 8

Student Directions: Read each statement carefully and decide if you can do the activity described. If you cannot do the activity, circle UP; if you can do the activity, circle AP; and if you can do the activity easily and thoroughly, circle OP.

Remember: cannot do = UP; can do = AP; can do easily = OP.

8.1	Carry out proper use and care procedures for using cold beverage equipment.	UP	AP	OP
8.2	Explain the differences in types of commercial ovens.	UP	AP	OP
8.3	Evaluate the quality of products fried in the deep fat fryer.	UP	AP	OP
8.4	Identify hand utensils commonly found in food service.	UP	AP	OP
8.5	Identify small cleaning equipment.	UP	AP	OP
8.6	Demonstrate correct procedures for use and care of serving utensils.	UP	AP	OP
8.7	Perform a specific task using the correct serving equipment.	UP	AP	OP
8.8	Demonstrate correct procedure for laying a table-cloth.	UP	AP	OP
8.9	Perform a specific task in food preparation using the correct knife.	UP	AP	OP
8.10	Determine the degree of observance of sanitation standards in commercial food service facilities.	UP	AP	OP
8.11	Carry out pre-wash procedures for dishwashing operation.	UP	AP	OP
8.12	Use requisition forms correctly.	UP	AP	OP
8.13	Relate techniques for food production to quality.	UP	AP	OP
8.14	Identify and correctly use convenience foods in food service.	UP	AP	OP
8.15	Solve problems in increasing and decreasing recipes.	UP	AP	OP
8.16	Demonstrate methods of reducing or preventing waste in preparing vegetables and fruits.	UP	AP	OP

8.17	Prepare soup using proper techniques.	UP	AP	OP
8.18	Identify the basic types of cookies.	UP	AP	OP
8.19	Identify major varieties of meat, poultry and seafood.	UP	AP	OP
8.20	Identify spices, herbs and extracts that are used in flavoring foods.	UP	AP	OP
8.21	Demonstrate the cover set up for American service.	UP	AP	OP
8.22	Demonstrate the procedure used by the host or hostess for the departing guest.	UP	AP	OP
8.23	Demonstrate booth service.	UP	AP	OP
8.24	Demonstrate cafeteria service.	UP	AP	OP
8.25	Demonstrate procedure for proving cash.	UP	AP	OP

CAC 9

Student Directions: Read each statement carefully and decide if you can do the activity described. If you cannot do the activity, circle UP; if you can do the activity, circle AP; and if you can do the activity easily and thoroughly, circle OP.

Remember: cannot do = UP; can do = AP; can do easily = OP.

9.1	Use and clean the ice maker using proper procedures.	UP	AP	OP
9.2	Use and clean the oven without assistance.	UP	AP	OP
9.3	Identify the types of broilers in food service facilities.	UP	AP	OP
9.4	Relate hand utensil to assigned task.	UP	AP	OP
9.5	Demonstrate a correct method of sweeping with a push broom.	UP	AP	OP
9.6	Identify condiment containers and dispensers used in food service.	UP	AP	OP
9.7	Display a desire to follow correct procedure for using serving equipment in food service.	UP	AP	OP
9.8	Demonstrate various ways to fold a napkin.	UP	AP	OP
9.9	Demonstrate procedures for sharpening a knife with a stone and steel.	UP	AP	OP
9.10	Follow legal sanitation standards.	UP	AP	OP
9.11	Follow manual dishwashing procedures.	UP	AP	OP
9.12	Use procedures which save time and energy.	UP	AP	OP
9.13	Adopt standards of quality in food production.	UP	AP	OP
9.14	Perform assigned tasks using measuring equipment.	UP	AP	OP
9.15	Apply correct procedures for making quantity beverages.	UP	AP	OP
9.16	Apply correct procedures for cooking vegetables and fruits.	UP	AP	OP
9.17	Identify pastry products.	UP	AP	OP
9.18	Apply correct steps in cookie preparation.	UP	AP	OP
9.19	Demonstrate proper methods for care and storage of meats, poultry and seafood.	UP	AP	OP

9.20	Demonstrate the use of spices, herbs and extracts in preparing foods.	UP	AP	OP
9.21	Demonstrate the cover set up for French service.	UP	AP	OP
9.22	Demonstrate how the host or hostess should handle customer complaints.	UP	AP	OP
9.23	Use correct procedures for removing used tableware items.	UP	AP	OP
9.24	Define "room service".	UP	AP	OP
9.25	Identify tasks involved in bus service in the dining area.	UP	AP	OP

CAC 10

Student Directions: Read each statement carefully and decide if you can do the activity described. If you cannot do the activity, circle UP; if you can do the activity, circle AP; and if you can do the activity easily and thoroughly, circle OP.

Remember: cannot do = UP; can do = AP; can do easily = OP.

10.1	Apply safe procedures in use and care of the refrigerator and freezer.	UP	AP	OP
10.2	Accept responsibility for keeping ovens clean.	UP	AP	OP
10.3	Follow safe procedures for use and care of the broiler.	UP	AP	OP
10.4	Perform assigned task using hand utensils efficiently.	UP	AP	OP
10.5	Display the correct procedure for mopping.	UP	AP	OP
10.6	Demonstrate correct procedures for use and care of condiment containers and dispensers.	UP	AP	OP
10.7	Follow the procedures for safely using and cleaning the food slicer.	UP	AP	OP
10.8	Demonstrate how to fill a dispenser with paper napkins.	UP	AP	OP
10.9	Display continuing desire to use, store and care for knives safely.	UP	AP	OP
10.10	Identify grooming habits for food service workers.	UP	AP	OP
10.11	Carry out procedures for correct handling of clean tableware.	UP	AP	OP
10.12	Analyze techniques used in performing specific tasks.	UP	AP	OP
10.13	Define "portion control".	UP	AP	OP
10.14	Identify abbreviations for measurements in food production.	UP	AP	OP
10.15	Identify types of hot and cold sandwiches sold commercially.	UP	AP	OP
10.16	Prepare quick breads using correct techniques.	UP	AP	OP
10.17	Apply proper techniques for preparing pastry.	UP	AP	OP
10.18	Identify types of milk desserts.	UP	AP	OP

10.19	Define "dry and moist heat" cookery.	UP	AP	OP
10.20	Display a desire to correctly use, store and care for spices, herbs and extracts in food preparation.	UP	AP	OP
10.21	Demonstrate the cover set up for Russian service.	UP	AP	OP
10.22	Demonstrate correct methods of handling responsibilities of the host or hostess.	UP	AP	OP
10.23	Show the correct procedures for serving guests.	UP	AP	OP
10.24	Demonstrate room service procedures.	UP	AP	OP
10.25	Demonstrate the correct procedures for fast and efficient performance of bus service tasks.	UP	AP	OP

The purpose of this test is to collect information about knowledge of students in different types of food service programs. This test will not reflect on your performance or grade in this class. No attempt will be made to identify you as an individual. Thank you for your cooperation.

Directions: Please write the letter of the response that you feel is the best answer in the blank to the left of each item.

_____ 1.1 Which of the following is not the duty of a salad maker?
a. Prepares all salads
b. Make sandwich orders as they come in
c. Cleans and prepares all vegetables
d. Prepares fillings and dressings

_____ 1.2 Who is generally responsible for replenishing the side stations, coffee station, etc. in the dining room?
a. Manager
b. Host or hostess
c. Waiter or waitress
d. Busboy or busgirl

_____ 1.3 A manicure is care of the _____.
a. complexion
b. body
c. hands and nails
d. clothes

_____ 1.4 To prevent food poisoning and trichinosis, pork should be cooked to an internal temperature of _____.
a. 90° F.
b. 135° F.
c. 170° F.
d. 200° F.

_____ 1.5 Which of the following minerals helps to build strong blood?
a. Iron
b. Calcium
c. Iodine
d. Copper

_____ 1.6 Which of the following is a good source of Vitamin A?
a. Cheeses
b. Dark green leafy vegetables
c. Meats
d. Breads

_____ 1.7 Which of the following is a concentrated source of energy that contains Vitamins A, D, K, and E?
a. Fats
b. Proteins
c. Carbohydrates
d. Cereals

_____ 1.8 A proofing cabinet is used to _____.
a. heat baked goods
b. bake cakes, pies, rolls and other bakery items
c. allow yeast dough products to rise
d. test baked goods

_____ 1.9 Which of the following is not a part of a malt mixer?
a. Speed switch
b. Glass gauge
c. Spindle
d. Drip tray

_____ 1.10 What is the purpose of the detergent reservoir on the dishwasher?
a. Holding extra detergent which is added automatically to the wash water
b. Storing detergent
c. Adding detergent if dishes are extra dirty
d. Adding a second type of detergent

_____ 1.11 Which of the following are not parts of a salad-station unit?
a. Sink and cleaning unit
b. Chopping board
c. Drain boards
d. Heating units

_____ 1.12 Which of the following is not a mixer attachment for most commercial mixers?
a. Whip
b. Pastry knife
c. Dough hook
d. Knife sharpener

_____ 1.13 Which of the following is not flatware?
a. Tongs
b. Fork
c. Teaspoon
d. Iced teaspoon

_____ 1.14 Standardized recipes aid in all of the following except _____.
a. control of quality
b. control of quantity
c. control of costs
d. control of customer satisfaction

_____ 1.15 Which of the following is the reason why cheese is often used in food service?
a. There is very little waste involved
b. It is an economical substitute for meat dishes
c. It supplies the body with essential nutrients
d. All of the above

The purpose of this test is to collect information about knowledge of students in different types of food service programs. This test will not reflect on your performance or grade in this class. No attempt will be made to identify you as an individual. Thank you for your cooperation.

Directions: Please write the letter of the response that you feel is the best answer in the blank to the left of each item.

_____ 2.1 Which of the following is not a duty of the chef?
a. Plans and writes menus
b. Develops new recipes
c. Trains other food preparation workers
d. Supervises product delivery

_____ 2.2 To which of the following places could a good service manager go to get information on health regulations?
a. National Restaurant Foundation
b. Local health department
c. U.S. Department of Health, Education and Welfare
d. All of the above

_____ 2.3 Food service employees are required by law to wash their hands after going to the bathroom in order to _____.
a. maintain a clean appearance
b. avoid dirty nails
c. avoid contact with germs
d. prevent the spread of diseases

_____ 2.4 What is a Class A fire?
a. Combustible solids
b. Electrical equipment
c. Combustible metals
d. Flammable liquids

_____ 2.5 Which of the following minerals helps to regulate the thyroid gland?
a. Iodine
b. Iron
c. Vitamin C
d. Thiamine

_____ 2.6 Which of the following would not be considered in the meat group?
a. Eggs
b. Chicken
c. Dried beans
d. Cheese

_____ 2.7 Which of the following is not a fat-soluble vitamin?
a. Vitamin B
b. Vitamin A
c. Vitamin D
d. Vitamin E

_____ 2.8 Water boils at _____.
a. 100° F.
b. 150° F.
c. 180° F.
d. 212° F.

_____ 2.9 Which of the following should be used for cleaning the ice maker machine?
a. Soft brush
b. Bristle brush
c. Sponge
d. Soft cloth

_____ 2.10 What is the purpose of the curtain on the dishwasher?
a. To prevent customers from viewing the process
b. To keep the water from spraying outside the dishwasher
c. To hold the dishes and utensils
d. To decrease noise during operation

_____ 2.11 Which of the following is <u>not</u> a proper procedure for cleaning the salad-section unit?
a. Sanitize at end of each shift
b. Delime twice a week
c. Rinse sink with solution that reduces bacteria
d. Spray area with solution that eliminates odor

_____ 2.12 Which of the following is <u>not</u> a safety precaution for using the food mixer?
a. Select the correct bowl for the type of mixture and then select the correct beater
b. Be sure to fasten bowl and beater before starting the motor
c. Be careful when putting hand or utensils into bowl while it is in operation
d. Use a rubber scraper to scrape down sides of bowl and to remove food from beater

_____ 2.13 Which of the following terms does <u>not</u> apply to food decorating equipment?
a. Placemat
b. Cookie press
c. Paper cone
d. Pastry bag

_____ 2.14 Which of the following could cause a yeast bread product to be too dark?
a. Too much sugar
b. Insufficient rising time
c. Oven temperature too high
d. All of the above

_____ 2.15 Which of the following is a cause of a soggy lower crust on pies?
a. The dough was overhandled
b. The oven temperature was too low
c. The oven heat was uneven
d. All of the above

The purpose of this test is to collect information about knowledge of students in different types of food service programs. This test will not reflect on your performance or grade in this class. No attempt will be made to identify you as an individual. Thank you for your cooperation.

Directions: Please write the letter of the response that you feel is the best answer in the blank to the left of each item.

_____ 3.1 Which employee would make sure that all food served meets the standards of the establishment?
a. Chef
b. Cook's helper
c. Waitress
d. Food Services Manager

_____ 3.2 Which is not true about the walls and ceiling of a food service establishment?
a. They should be washable
b. They should be free of cracks and openings around the pipes
c. They may be painted any color
d. They must be waterproof

_____ 3.3 The term "personal hygiene" is meant to refer to one's _____.
a. cleanliness
b. good health
c. good posture
d. preparation of food

_____ 3.4 What is a Class B fire?
a. Combustible solids
b. Electrical equipment
c. Flammable liquids
d. Combustible metals

_____ 3.5 Which of the following nutrients helps to build and repair all tissues in the body?
a. Protein
b. Riboflavin
c. Vitamin K
d. Iron

_____ 3.6 Which of the following is not a recommended way to help lose weight?
a. Slice food thinly
b. Eat quickly
c. Chew food thoroughly
d. Avoid second helpings

_____ 3.7 The most important meal of the day that most people neglect is _____.
a. lunch
b. snacks
c. breakfast
d. dinner

_____ 3.8 Which of the following is not a part of a coffee urn?
a. Heating element
b. Spout or spigot
c. Serving tray
d. Brewing basket

_____ 3.9 Which of the following is not a part of a cold drink dispenser?
a. Drink head
b. Drink release
c. Drink tray
d. Drink container

_____ 3.10 What is the purpose of the racks in the dishwasher?
a. For storage
b. For holding the dishes and utensils
c. For stacking extra heavy items
d. For use when an extra high temperature is needed

_____ 3.11 Which of the following is not part of a sandwich station?
a. Cutting board
b. Refrigerated compartment
c. Storage compartment
d. Drink compartment

_____ 3.12 Which of the following may not be used in cooking in a microwave oven?
a. Glass
b. Metal
c. Paper
d. Plastic

_____ 3.13 Which of the following is not true about a baker's scale?
a. It measures up to 24 pounds
b. It has two platforms
c. The beam is divided into 64 units
d. A weight is attached to the beam

_____ 3.14 Which of the following could cause "cracks" in a yeast bread product?
a. Too much sugar
b. Not enough salt
c. Crusting of dough during rising
d. Overkneading

_____ 3.15 What is the cause of a tough pie crust?
a. Insufficient shortening was used
b. The oven temperature was too high
c. Too much shortening was used
d. The pastry was rolled too thin

The purpose of this test is to collect information about knowledge of students in different types of food service programs. This test will not reflect on your performance or grade in this class. No attempt will be made to identify you as an individual. Thank you for your cooperation.

Directions: Please write the letter of the response that you feel is the best answer in the blank to the left of each item.

_____ 4.1 Which of the following employees would be doing deep fat frying and preparing eggs, fritters, omelets and pancakes?
a. Second cook
b. Chef
c. Cook's helper
d. Fry cook

_____ 4.2 Floor racks in the dry food storage area should be removable and at least _____ inches off the floor.
a. 2 inches
b. 5 inches
c. 10 inches
d. 24 inches

_____ 4.3 The term "grooming" is meant to refer to one's _____.
a. personal appearance
b. health
c. care of teeth and nails
d. attitude

_____ 4.4 Which of the following extinguishers can be used only on Class A fires?
a. Water
b. Foam
c. Carbon dioxide
d. Dry-chemical

_____ 4.5 Which of the following nutrients supplies energy and carries other nutrients present in food?
a. Carbohydrates
b. Fats
c. Proteins
d. Vitamins

_____ 4.6 Peanut butter can be considered as a serving in the _____ food group.
a. meat
b. milk
c. bread
d. fruit and vegetable

_____ 4.7 Another word for lack of water in the body is _____.
a. satiety
b. obesity
c. dehydration
d. inflammation

____ 4.8 Which of the following is an example of a safe and sanitary procedure for using the coffeemaker?
a. Unplug coffeemaker if there is a spill over
b. Store cloth filter bags in warm water
c. Vary temperature of coffee from warm to hot to warm
d. Leave cleaning solution in coffeemaker overnight

____ 4.9 What is the function of the heater in the dishwasher?
a. Heats water to proper temperature for final rinse
b. Heats water to proper temperature for first rinse
c. Heats work area
d. Heats water for wash cycle

____ 4.10 Which of the following is <u>not</u> a type of hot food holding unit?
a. Steam serving table
b. Infra-red lamp
c. Dry heat serving table
d. Range

____ 4.11 Which of the following is <u>not</u> true regarding the use of a steam jacketed kettle?
a. Tap water should be used in a steam kettle
b. The amount of steam-operation pressure will be stamped on the front
c. Directions for the removal of air will be printed on the front
d. If the pressure goes in the 30-40 range, some steam must be released

____ 4.12 Which of the following is <u>not</u> a safety practice in using cutlery?
a. Use a cutting board when possible
b. A dull knife is safer to use than a sharp knife
c. Never hold a knife by the blade
d. Always hold a knife with the point down

____ 4.13 Veal is a meat from a young _____.
a. goat
b. lamb
c. pig
d. cow

____ 4.14 What is the proper term for the clearing of tables and dining area?
a. Clearing
b. Cleaning up
c. Bussing
d. Service

____ 4.15 What is the total of the following guest check?

Chicken.....	$2.95
Corn.....	.35
Pie.....	.40
Milk.....	.20
Coffee.....	.10
Total	?

a. $2.05
b. $3.00
c. $3.95
d. $4.00

The purpose of this test is to collect information about knowledge of students in different types of food service programs. This test will not reflect on your performance or grade in this class. No attempt will be made to identify you as an individual. Thank you for your cooperation.

Directions: Please write the letter of the response that you feel is the best answer in the blank to the left of each item.

_____ 5.1 Which of the following is not a duty of the food service manager?
a. Plan and write menus
b. Make out work schedules
c. Checks on food cost
d. Orders food

_____ 5.2 Which is not true of raw foods in a food service establishment?
a. They may be stored directly on the floor
b. They should be inspected at least weekly
c. They must be free from insect infestations
d. They must be stored in covered metal containers

_____ 5.3 Which of the following signs indicates that a canned food item is spoiled?
a. Dents in the can
b. Label is missing
c. Swollen top and bottom
d. All of the above

_____ 5.4 Which of the following extinguishers can be used with Class B and C fires, but not Class A fires?
a. Foam
b. Carbon dioxide
c. Water
d. Dry-chemical

_____ 5.5 How many servings of the dairy food group should teenagers have daily?
a. 8
b. 4
c. 2
d. None

_____ 5.6 The term "enriched" means that _____ has been added to a food.
a. water
b. weight
c. calories
d. vitamins and minerals

_____ 5.7 To preserve nutrients during the preparation of vegetables which of the following procedures is appropriate?
a. Soaking vegetables in water before cooking
b. Cooking vegetables in large amounts of water
c. Uncovering the pan while vegetables are cooking
d. Keeping chopped or shredded vegetables covered before cooking

____ 5.8 Which of the following is a good rule for cleaning the coffeemaker?
a. Use scouring powder for best results
b. Leave coffeemaker empty after completing task
c. Rinse thoroughly after cleaning
d. Clean the gauge glass by running hot water through it

____ 5.9 Which of the following is <u>not</u> a part of the dishwashing machine?
a. Curtains
b. Rinse-jet pipes
c. Overflow pipe
d. Spindle

____ 5.10 Which of the following is <u>not</u> a purpose of storing food in the refrigerator or freezer?
a. To prevent spoilage
b. To improve the taste of some foods
c. To improve texture of foods
d. To improve the color of foods

____ 5.11 Which of the following is an <u>advantage</u> of an infra-red lamp for holding hot foods?
a. It is portable
b. It does not dry foods out
c. It holds all types of foods
d. It reduces food shrinkage

____ 5.12 Which of the following is <u>not</u> true regarding the cleaning of a steam kettle?
a. Immediately after using fill with hot soapy water and let soak
b. Scrub with a steel wool pad
c. Scrub with a stiff brush
d. Scrub with a soft cloth

____ 5.13 Persons in charge of food storage areas should check for all of the following except _____.
a. that the merchandise is used before spoiling
b. that the equipment is in good working order
c. that the customers like the products
d. that the proper temperatures are maintained

____ 5.14 What is the name of the process of folding dough from sides to middle until most of its gas is expelled?
a. Bench and rest
b. Punching
c. Proofing
d. Kneading

____ 5.15 U.S.D.A. grading of poultry and game is based upon _____.
a. conformation
b. distribution of fat
c. condition of skin and general appearance
d. all of the above

The purpose of this test is to collect information about knowledge of students in different types of food service programs. This test will not reflect on your performance or grade in this class. No attempt will be made to identify you as an individual. Thank you for your cooperation.

Directions: Please write the letter of the response that you feel is the best answer in the blank to the left of each item.

_____ 6.1 Which of the following is not a duty of the purchasing agent?
a. Receives and inspects food
b. Stores food
c. Checks on food cost
d. Distributes foods as needed

_____ 6.2 The temperatures in a refrigerator should not be maintained above _____.
a. 20° F.
b. 40° F.
c. 50° F.
d. 100° F.

_____ 6.3 Which of the following signs indicates that left-over food is spoiled?
a. Discoloration
b. Off-color
c. Mold
d. All of the above

_____ 6.4 Vitamin C may also be called _____.
a. ascorbic acid
b. thiamine
c. riboflavin
d. biotin

_____ 6.5 How many servings from the meat group should teenagers have daily?
a. At least 1
b. 2 or more
c. 4
d. 6

_____ 6.6 What vitamin is called the sunshine vitamin because it works with sunshine to benefit our bodies?
a. Vitamin A
b. Vitamin B
c. Vitamin K
d. Vitamin D

_____ 6.7 A number 10 can can be substituted for _____.
a. 4 number 2 1/2 cans
b. 6 number 2 cans
c. 3 number 5 cans
d. 8 number 303 cans

____ 6.8 Which of the following is not a rule for cleaning a tea urn?
a. Flush with hot soapy water
b. Dismantle the faucet and clean each time
c. Clean the urn after daily use
d. Delime the urn each week

____ 6.9 Which of the following is not a proper procedure for loading the dishwasher?
a. Water can reach all surfaces of dishes
b. Dishes positioned so they won't hold water
c. Silverware loaded in cylinders with handles up
d. Avoid underloading or overloading

____ 6.10 Which of the following is not important in the care of a refrigerator or freezer?
a. Change temperature daily
b. Clean up spills immediately
c. Use soda instead of detergents for cleaning
d. Check temperature gauges daily

____ 6.11 Which of the following is an advantage of a steam serving table?
a. It holds all types of foods
b. It does not need to be preheated
c. The water does not need to be drained
d. It allows no chance of overcooking or sogginess

____ 6.12 Which of the following is not considered a surface cooking method?
a. Oven
b. Griddle
c. Deep fat fryer
d. Char-broiler

____ 6.13 Which of the following terms means to cook over steam rising from boiling water?
a. Scald
b. Steam
c. Simmer
d. Saute

____ 6.14 What is the name for the process of allowing the dough to rest and the gluten to develop?
a. Make-up
b. Rounding
c. Proofing
d. Bench and rest

____ 6.15 A thin liquid resulting from boiling meat or bones is a _____.
a. soup
b. stock
c. bouillon
d. base

The purpose of this test is to collect information about knowledge of students in different types of food service programs. This test will not reflect on your performance or grade in this class. No attempt will be made to identify you as an individual. Thank you for your cooperation.

Directions: Please write the letter of the response that you feel is the best answer in the blank to the left of each item.

_____ 7.1 Which is not generally the duty of a dietitian?
a. Plans menus with nutritional aspects uppermost in mind
b. Orders equipment
c. Responsible for client health care in the field of nutrition
d. Supervises food preparation

_____ 7.2 At the dishwashing area, the dishes should be washed in water that is _____ degrees.
a. 90° - 100° F.
b. 110° - 140° F.
c. 180° - 210° F.
d. 212° F.

_____ 7.3 Frozen foods should be stored at a temperature of _____.
a. 32° F. and less
b. 10° F.
c. 0° F. or less
d. - 30° F.

_____ 7.4 Albumin, the protein in milk, coagulates or solidifies when _____ is applied.
a. cold
b. heat
c. pressure
d. acid

_____ 7.5 Which of the following nutrients is highly damaged by contact with light, Ph and temperature changes?
a. Iodine
b. Vitamin A
c. Vitamin B
d. Vitamin C

_____ 7.6 Which of the following vitamins would help protect against night blindness?
a. Vitamin A
b. Vitamin C
c. Vitamin E
d. Vitamin K

_____ 7.7 The range of dangerous temperatures which favor bacterial growth in food items is _____.
a. 0 to 100° F.
b. 45 to 140° F.
c. 35 to 95° F.
d. 25 to 120° F.

____ 7.8 Which of the following is not an example of a cold-beverage dispensing machine?
a. Milk machine
b. Soft ice cream and malt machine
c. Fruit juice machine
d. Tea urn

____ 7.9 Which of the following is not a part of the pot-and-pan washing procedures?
a. Soaking
b. Rinsing
c. Sanitizing
d. Bleaching

____ 7.10 Which of the following terms does not apply to refrigeration of food?
a. Vapor moisture-proof paper
b. Thaw
c. Hydrator
d. Spindle

____ 7.11 Which of the following is an advantage of a dry heat table for holding foods?
a. Its temperature is easily controlled
b. Food does not dry out when it is used
c. It reduces food shrinkage
d. It allows no possibility of burns to employees

____ 7.12 Which of the following is not a part of a commercial toaster?
a. Heating element
b. Crumb tray
c. Holding tray
d. Browness regulator

____ 7.13 Which of the following terms means the main course of a meal?
a. Jus
b. Hors d'oeuvres
c. Entree
d. Escallop

____ 7.14 Eggs in the shell should be kept at temperatures ranging from _____.
a. 12° - 24° F.
b. 28° - 68° F.
c. 50° - 52° F.
d. 75° - 85° F.

____ 7.15 The mixture of fat and flour used in cream soups is a _____.
a. base
b. bouillon
c. roux
d. stock

The purpose of this test is to collect information about knowledge of students in different types of food service programs. This test will not reflect on your performance or grade in this class. No attempt will be made to identify you as an individual. Thank you for your cooperation.

Directions: Please write the letter of the response that you feel is the best answer in the blank to the left of each item.

_____ 8.1 Which of the following is not considered a type of food service establishment?
a. Institutional food service
b. Vending machine
c. Mobile food unit
d. All of the above are food service establishments

_____ 8.2 The dishes should be rinsed and sterilized in water that is _____ degrees or higher.
a. 212° F.
b. 180° F.
c. 150° F.
d. 100° F.

_____ 8.3 Which of the following is not a condition that encourages bacteria to grow?
a. Warmth
b. Food
c. Moisture
d. Cold

_____ 8.4 Which of the following food items has more protein?
a. Hamburger, 3 oz.
b. Carrots, 1/2 cup
c. Broccoli, 1/2 cup
d. Orange juice, 1 cup

_____ 8.5 Which of the following is not a major method of cooking?
a. Moist heat
b. Dry heat
c. Frying
d. Boiling

_____ 8.6 What part of the egg contains the most Vitamin A?
a. Yolk
b. Shell
c. White
d. The whole egg contains Vitamin A in equal quantities

_____ 8.7 Which of the following spoil most rapidly before and after cooking?
a. Pork
b. Beef
c. Poultry
d. Fish

____ 8.8 The wash arms on the dishwasher perform what job?
a. Sprays soapy hot water over the dishes and utensils
b. Sprays disinfecting solution over dishes and utensils
c. Sprays soapy hot water over the machine to prevent build up
d. Sprays clean water over dishes and utensils

____ 8.9 Which of the following foods cannot be cut with a food chopper?
a. Cabbage
b. Dry bread
c. Ham
d. Fresh fish

____ 8.10 Which of the following is not a part of a bench-type manual can opener?
a. Handle
b. Switch
c. Shank
d. Base

____ 8.11 Which of the following measures equals one cup?
a. 1/2 pint
b. 1 pint
c. 1 quart
d. 4 tablespoons

____ 8.12 Which of the following is not a grade of eggs?
a. AA
b. A
c. B
d. D

____ 8.13 Which of the following is a small cube of hardened seasoned bread?
a. Crouton
b. Fondue
c. Bisque
d. Chowder

____ 8.14 Another word used for items like mustard, mayonnaise and ketchup is _____.
a. garnishes
b. condiments
c. sauces
d. additives

____ 8.15 Pennsylvania state sales tax of 6% would amount to _____ on a bill of $2.80.
a. 14.0¢
b. 15.0¢
c. 16.8¢
d. 19.5¢

The purpose of this test is to collect information about knowledge of students in different types of food service programs. This test will not reflect on your performance or grade in this class. No attempt will be made to identify you as an individual. Thank you for your cooperation.

Directions: Please write the letter of the response that you feel is the best answer in the blank to the left of each item.

_____ 9.1 Hollandaise sauce should not be kept more than _____ hours after it is made.
a. 2
b. 4
c. 10
d. 24

_____ 9.2 Since bacteria grow slowly at this temperature, hot foods should be heated to over _____ as fast as possible and held at or above this temperature.
a. 50° F.
b. 100° F.
c. 120° F.
d. 140° F.

_____ 9.3 Which of the following food items has more protein?
a. Bread (enriched), 1 slice
b. Margarine, 1 tsp.
c. Skim milk, 1 cup
d. Carrots, 1/2 cup

_____ 9.4 Which of the following is not one of the "B" Vitamins?
a. Thiamine
b. Biotin
c. Niacin
d. Riboflavin

_____ 9.5 Which of the following substances accounts for 2/3 of the body's weight?
a. Bones
b. Blood
c. Water
d. Muscles

_____ 9.6 Salmonella is best defined as a _____.
a. covered pan used for steaming fish
b. menu item based on salmon eggs
c. menu item featuring fish in a cream sauce
d. bacteria which flourishes in some prepared foods

_____ 9.7 Which of the following is a good procedure for a food service worker?
a. Drinking remainder of malt from the mixer container
b. Drinking a coke while on the job dispensing beverages
c. Snacking in employees' lounge
d. Using hands to get ice from ice maker

____ 9.8 The rinse jets on the dishwasher perform what job?
a. Sprays soapy hot water over the dishes and utensils
b. Sprays disinfecting solution over dishes and utensils
c. Sprays dishes with clear hot water to sanitize them
d. Regulates pressure of rinsing arm

____ 9.9 Which of the following are <u>not</u> parts of the food slicer?
a. Food carriage
b. Gauge plate
c. Drain tray
d. Receiving tray

____ 9.10 Water in the steam table should be kept at what temperature?
a. 100° F.
b. 140° F.
c. 180° F.
d. 212° F.

____ 9.11 Which of the following measures equals one pound?
a. 1.06 quarts
b. 2.04 centimeters
c. 454 grams
d. one kilogram

____ 9.12 The term "pasta" is used to refer to _____.
a. all types of spaghetti
b noodles and rice only
c. Italian shaped noodles
d. all types of macaroni, spaghetti and noodles

____ 9.13 What is the word for an ornament or decoration for a food item?
a. Entree
b. Touch-up
c. Garnish
d. Glaze

____ 9.14 In a standard dinner setting the fork is placed _____.
a. to the left of the plate
b. to the right of the plate
c. above the water glass
d. beside the knife

____ 9.15 What is the total of the following guest check?

Hamburger.....	80¢
French Fries.....	30¢
Coke.....	25¢
Total	?

a. $1.10
b. $1.15
c. $1.25
d. $1.35

The purpose of this test is to collect information about knowledge of students in different types of food service programs. This test will not reflect on your performance or grade in this class. No attempt will be made to identify you as an individual. Thank you for your cooperation.

Directions: Please write the letter of the response that you feel is the best answer in the blank to the left of each item.

_____ 10.1 Which of the following employees is mainly responsible for welcoming and attending to the comfort of the guest?
a. Waiter or waitress
b. Host or hostess
c. Food service manager
d. Busboy or busgirl

_____ 10.2 How often should the guests' table tops and food preparation counters be cleaned with a sanitizing solution?
a. At least once a day
b. Every time they are used
c. Once a week
d. Once every two weeks

_____ 10.3 Since bacteria grow slowly at these temperatures, cold food should be cooled to below _____ as fast as possible and held at this temperature.
a. 80° F.
b. 60° F.
c. 40° F.
d. 0 ° F.

_____ 10.4 Which of the following is a good source of Vitamin C?
a. Dark green vegetables
b. Citrus fruits
c. Milk
d. Meat

_____ 10.5 Which of the following is a meat that contains a high quantity of Iron and Vitamin A?
a. Fish
b. Liver
c. Chicken
d. Beefsteak

_____ 10.6 The most appropriate storage for fresh leafy vegetables is a _____.
a. cool dry storage of 50° to 60° F.
b. dry storage of 70° F.
c. refrigerated storage
d. freezer storage

_____ 10.7 Which of the following is <u>not</u> a part of an ice cream machine?
a. Danger light
b. Drip pan
c. Heating element
d. Dasher

_____ 10.8 What is the purpose of the scrap tray on the dishwasher?
a. Scraping dishes in before they are placed in machine
b. Storing food for later use
c. Holding dishes and utensils
d. Collecting bits of food from the dishes and utensils during the washing process

_____ 10.9 Which of the following is <u>not</u> a part of the food chopper?
a. Bowl guard
b. Bowl
c. Bowl drain
d. Blade

_____ 10.10 Which of the following is <u>not</u> a part of the food mixer?
a. Pedestal
b. Drain tray
c. Bowl clamp
d. Beater shaft

_____ 10.11 Which of the following is <u>not</u> a serving utensil?
a. Tongs
b. Spatula
c. Scoop
d. Pie marker

_____ 10.12 In a commercial operation, sugar is measured by _____.
a. the liter
b. the meter
c. the gram
d. the quart

_____ 10.13 A good rule of thumb in cooking pasta is _____ parts salted water to one part pasta.
a. 5
b. 4
c. 3
d. 2

_____ 10.14 Little foods or snacks served before a meal or at a party are called _____.
a. canapes
b. hors d'oeuvres
c. parisiennes
d. sprigs

_____ 10.15 What is room service?
a. Food served in a particular area of a restaurant
b. Food service in a hospital
c. Food brought to the rooms in a hotel or motel
d. Food service in schools or institutions

APPENDIX C

Letter to Teachers
Letter of Information
and
Parental Consent Form

THE PENNSYLVANIA STATE UNIVERSITY
212 RACKLEY BUILDING
UNIVERSITY PARK, PENNSYLVANIA 16802

College of Education
Department of Home Economics Education

Area Code 814
865-5441

September 27, 1976

Re: Food Service Curriculum Evaluation Project

Attached with this letter are (1) a letter to the parents and (2) a parental permission form. These are to go to the parents of those students in the food service program that are 18 years of age or under. THE PARENTAL PERMISSION FORM MUST BE SIGNED AND RETURNED TO THE SCHOOL BEFORE THE TESTING RELATED TO THE FOOD SERVICE CURRICULUM PROJECT CAN BEGIN. Please have your students obtain the necessary signature as soon as possible and returned to you. These forms will be retained in a sealed envelope in the office of the Vice President for research for the Pennsylvania State University.

Ms. Peggy Kimsey will contact you late this week or early next week in order to schedule the testing, and it is hoped that the forms will be completed before she comes to your school to do the testing.

If you have any questions, please call myself, or Ms. Kimsey and we will be glad to assist you.

Sincerely,

Susan F. Weis
Project Director

SFW/jec

attachment

THE PENNSYLVANIA STATE UNIVERSITY
212 RACKLEY BUILDING
UNIVERSITY PARK, PENNSYLVANIA 16802

College of Education
Department of Home Economics Education

Area Code 814
865-5441

September 24, 1976

Dear Parent;

Your school is cooperating with The Pennsylvania State University in a study of a new vocational food service education program. The results of the study should assist in Pennsylvania's continuing attempts to develop programs with a maximum benefit to students. To conduct this study it is necessary to gather certain information from selected students.

Your son or daughter has been selected to take part in the study because of their enrollment in a vocational food service education program which was chosen on the basis of its geographic location and type of school. The students who have been selected will be asked to complete three questionnaires on what they know and what they feel about food service and how well they can perform some tasks common to the occupational area. No questions of a sensitive or embarrassing nature are included in the questionnaires nor will any answers be identified with any individual students.

Before any student under the age of eighteen can complete the questionnaires, we must have written permission from his or her parent or legal guardian. Will you please sign the enclosed form and have your son or daughter return it to the school?

Sincerely,

Susan F. Weis
Project Director

_____
Teacher

Parental Permission

I give permission for my son or daughter to participate in the study being conducted in cooperation with The Pennsylvania State University. His or her cooperation will involve completing three brief questionnaires.

I understand that even with my permission my son or daughter still has the right to decline to cooperate or to answer any question he or she does not wish to answer. At any point my son or daughter has the right to decide not to participate any further.

If my son or daughter does complete the questionnaires, I understand that all information will be held in strict confidence and will be used only for research purposes. No information about any student will be seen by anyone outside the research staff. The final report will present summaries of all students' answers and will in no way identify any individual student.

_____ _____

Parent Signature Date

_____

Student's Name

APPENDIX D

Curriculum Reaction Form

CURRICULUM REACTION FORM

On (date) _____, I used pages _____ of the pilot curriculum in teaching my class of (number) _____ students. The grade level of these students was _____.

My reaction to the curriculum section was _____

As a teacher I found this (easy to use) (difficult to use) (about the same as my existing curriculum) because _____

My students seemed to (react favorably) (react unfavorably) (remain passive) when I used this lesson from the pilot curriculum because

This experience seems to (increase) (decrease) (not change) their learning or competence of this subject matter because _____

I would recommend the following changes in the pilot curriculum materials as a result of this experience _____

This material is (helpful) (not helpful) to me in my teaching.

APPENDIX E

Minutes of Advisory Committee Meeting

Minutes of Advisory Committee
October 25, 1976

The first meeting of the Food Service Curriculum Project Advisory Committee was held at the Holiday Inn, State College, PA, on October 25, 1976. Dr. Thomas F. Powers, Professor in Charge from the Food Service and Housing Administration Department at Penn State opened the meeting by welcoming the members. Those in attendance were: Dr. Powers; Mr. Richard D. Snyder, Jr., Chairman, Pennsylvania Restaurant Association Education Committee, Dick's Diner, Murrysville, PA; Mr. William Lapitsky, President, Red Barn Restaurants, Lewisberry, PA; Mr. Richard Benefield, General Manager, Hotel Magee, Bloomsburg, PA; Mr. William Springer, Director of Vocational Education, Centre County Area Vocational-Technical School; Ms. Carolyn Kratz, Senior Program Specialist, Pennsylvania Deparment of Education; Dr. Susan Weis, Associate Professor, Home Economics Education, Penn State University; and Ms. Susan Lewis, Research Assistant, Food Servcie Curriculum Project, Penn State University.

It was noted that two members, Ms. Barbara Russell, Supervisory Instructional Specialist, Home Economics, Pittsburgh Public Schools, Pittsburgh, PA, and Mr. Richard Stabler, Guidance Counselor, Bloomsburg, PA, were unable to attend.

Dr. Powers briefly outlined the research done at Penn State on food service curriculum development sponsored by the Pennsylvania Department of Education. He then introduced Dr. Susan Weis as future chairwoman of the committee.

The committee discussed the problem of communication and differing expectations of vocational teachers and restaurant owners and managers in regard to the students' training level and established routes for moving up in food service establishments.

Copies of the curriculum guide were circulated among the committee members. Ms. Susan Lewis explained the design and scope of the guide.

Ms. Carolyn Kratz spoke about the Pennsylvania Department of Education's history and interest with Food Service Education.

It was noted that workshops for vocational food service teachers as well as public school cafeteria managers and administrators had been held at Penn State for many years. Dr. Susan Weis, who has directed many of these workshops, described the activities designed for the workshops which included, curriculum materials development, as well as quantity cookery, food service budgeting, and personal growth sessions.

Ms. Carolyn Kratz noted that workshops for introducing the new food service curriculum guide might be held after the curriculum was finalized.

Industry representatives were asked if they would participate as speakers for these workshops. The committee agreed that industry's participation would be effective in inducing cooperation between schools and industry.

Mr. Snyder, Mr. Lapitsky, and Mr. Benefield each briefly expressed what they experienced as industry's viewpoint of skills and attitudes needed for success in the food service industry.

Mr. Springer described how the vocational program was most beneficial to the student learning an entry level skill.

It was suggested that Ms. Lewis attend the morning meeting of the Pennsylvania Restaurant Association Education Committee to report on the Food Service Advisory Committee's meeting. The results of the PRAE meeting were very encouraging. The members were very interested in the guide and hopeful that cooperative activities would be possible. Ms. Lewis' name and address were entered into the PRAE meeting's minutes so members with comments or suggestions could reach her.

The meeting of the Food Service Education Advisory Committee was adjourned.

Susan Lewis
Recorder